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THE

RETROSPECT

OF

PRACTICAL MEDICINE & SURGERY,

BEING

A Half-Yearly Journal,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

Edited by
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DISEASES AFFECTING THE SYSTEM GENERALLY.

ART. 1.—ON FEVER.—By JAMES COPLAND, M.D., F.R.S., &c., &c.

[A very interesting question arises in the study of fever, as to the manner in which the blood and the various organs become affected. Is the morbific influence conveyed to the secreting and other organs by means of the blood or of the organic nervous system, or by mere continuity and contiguity of surface and structure? And is the blood itself affected by the direct contact of a poison, or by nervous influence, or by failure of the excreting processes? Dr. Copland shall answer. He observes,—]

It would be interesting to trace the manner in which the different systems of the frame become affected during the progress of various fevers. There is a certain class, for instance, that has been called periodic fevers; others, typhoid fevers; and others, pestilential or malignant fevers. Fevers have been variously classed; indeed they admit of a variety of classifications. With respect to periodic fevers, or those that arise from malaria, it may be remarked, that the morbid influence producing them seems to implicate especially the organic nervous system. There are various reasons for believing that this system is primarily affected, and that the fluids and abdominal viscera become more or less disordered secondarily. These reasons appear to be, first, the long period of incubation in many of the periodic fevers, Intermittent fever may not appear until many weeks after the individual has been exposed to malaria, and then the paroxysms occur at intervals. We know that morbid impressions, or irritations, or other morbid conditions affecting nervous parts, usually assume a periodic character. If it were the blood which is affected in these cases, we might infer that that state of the blood which existed during the paroxysm would most likely continue without intermission until removed: and that, instead of an interval, when comparatively little disorder is felt, the disease would be continued; for we observe that, in proportion as the blood becomes affected in fever, so does the disease assume a more and more continued type. There are various lesions prominently affecting particular organs, and which give fevers variety of character: thus we have gastric fever, bilious fever, and so on.

If we proceed to the consideration of the worst forms of fever, for instance, typhus, or pestilential fever, not only is the nervous system affected—the organic nervous system being probably the first to be impressed with the cause of the disease—but also the blood itself soon becomes more or less disordered—becomes physically changed.

Now the question is, whether this change produced so early in the blood in typhoid and pestilential fevers, arises primarily from the absorption of the cause into the blood, or whether it arises from the morbid impression made on the organic nervous system, owing to which impression the excreting or depurating functions, which are under the influence of this system, are impaired or arrested, and the circulating vessels and fluids become affected, and ultimately changed? I may point out to you how copiously the vascular system is supplied by the organic or ganglial system; and hence we may expect, *à priori*, that causes affecting this system will, to a co-ordinate extent, affect the vascular system and the fluids in the vessels. We find that, in the progress of fevers, the blood becomes changed; and the change may arise partly from the impression made by the emanations causing the fever, upon the organic nervous system, and partly from the absorption of the emanation—of the morbid poison—into the circulating mass. I believe that the morbid effluvium, being received into the lungs with the air, injuriously affects the organic nervous system supplying these organs: hence the blood in the lungs is not sufficiently changed. Possibly partial absorption of this effluvium may take place into the blood itself; but if it does not, there is a still stronger reason to infer that the morbid impression extends throughout the organic nervous system, impairing the influence of it upon the vascular system, and in the secreting and excreting viscera. The organic nervous power being depressed, it naturally follows that the organs supplied by this system will be impaired in function; and hence we find that, in the first days, or within the first twenty-four hours of fever, the functions of the excreting organs are very remarkably diminished, or even suppressed; and the consequence is, that the blood, which may have been hitherto unaffected, becomes changed; or, if it have been already affected by the cause of the disease, or by the impression on the ganglial system, becomes still further changed. Thus the one change reacts on the other, and promotes it, until at last the changes in the organic or vital nervous influence, and in the vascular system and circulating fluids, become so great, that the blood is not only altered sensibly as it respects both its physical characters and its chemical qualities, but the tissues and organs themselves become more and more disorganized, or evince a remarkable loss of their natural vital cohesion, especially in distempers of a malignant character.

Med. Gaz., Nov. 12, 1847, *p.* 840.

2.—USE OF CAMPHOR IN FEVER.—By Sir James Murray.

At a meeting of the Medical Society of London, Sir James Murray, after alluding to the disadvantages attending the exhibition of camphor in the usual form, exhibited to the Society a solution of camphor in his fluid magnesia. In this preparation it is administered more easily; it is almost tasteless, the flavor of the magnesia being also masked by it. One ounce contains three grains of camphor: it does not turn white when mixed with water, nor does it separate in the stomach; in fact, the camphor will not separate unless the liquid is either boiled or frozen; an ounce of it forms a very convenient and efficacious dose as a stimulant; if frequently repeated, and in larger doses, it acts as a sedative. Sir James mentioned that the solution could easily have been increased in strength. He had found this proportion of soluble camphor of great use in the fever now so generally prevailing, which was characterized by great prostration, mental confusion, oppression, and despondency, owing to previous debility from bad food, impure air, and privations, the blood being thin and dark-colored from imperfect arterialization. Diarrhœa is a very general symptom, attended with severe pain over the stomach and colon on the slightest pressure; even when subacute inflammation existed in the alimentary cavities, and where wine and ordinary stimulants would be hurtful, Sir James has found this fluid camphor admirably adapted to support the general strength. He had found it very useful in some cases, where, on account of delirium and cerebral excitement, leeches and local depletion were at the same time necessary. Under its use the tongue became moist, the skin softened, the pulse was reduced in frequency, and it seldom failed to relieve that oppressed breathing which is so often the result of debility. This preparation also enables us to distinguish between delirium from exhaustion, and delirium from an inflammatory state of the brain. In the former it continues to exhibit an improvement which cannot be mistaken, and in the latter, it sustains the vital powers, until suitable depleting means can be carried out. Again, where weakness is caused by diarrhœa, the moderate proportion of fluid magnesia, which forms part of this liquid camphor, prevents acids and crudities in the alimentary passages, and forms a very valuable vehicle in which to administer opiates and other remedies. The low degree of vitality prevalent in these fevers greatly augmented the disposition to gangrenous sores and sloughing ulcers—in these cases the aqueous solution of camphor presents many advantages over its spirituous applications; the watery solution, not being volatile, remains fixed and durable where applied in poultices, lotions, or embrocations: whereas, when a tincture is used, the spirit flies off by evaporation, leaving the camphor in the state of an irritating frost-work on the skin. It also forms an excellent collyrium in scrofulous affections of the eyelids, and a soothing application to painful swellings, sprains, or bruises; for removing the fœtor of bed sores and ulcerated surfaces, it is particularly well adapted.

Professor Hart, of Dublin, assured Sir James that it was one of the most effectual medicines for the prevention of cramps and collapse, and that camphor was always a most useful stimulus in the extensive cholera hospital under his charge. It does not, like other stimulants, augment the danger of congestion. Fluid camphor is a very valuable agent in abating nervous or spasmodic constriction during fits of asthma, where there is not any organic alteration. The liquid magnesia combined with this fluid, tends to preserve a more healthy condition of the alimentary organs, a precaution always to be observed in the treatment of asthmatic ailments. From the known properties of camphor in destroying white-blooded animals, Sir James Murray was induced to administer the fluid camphor both by the stomach and by enema, for the destruction of intestinal worms, with considerable success, the worms being expelled dead.

Dr. Copland said that he had given camphor in every dose. When he was in Germany, soon after the peace, low fever was very prevalent, and camphor was the remedy usually adopted, three grains being administered every four or five hours. One ounce of this solution, containing three grains, would generally prove a sufficient dose, frequently repeated; but in low fever it is sometimes necessary to give fifteen-grain doses three or four times a day, combining it with calomel and opium. This preparation seems an excellent one; for, when given in a solid form, it irritates the stomach, and in the ordinary solutions the camphor soon separates, and spirituous tinctures cause unpleasant eructations. There is nothing empirical about it, as the mode of preparation is known by the profession. In asthma he had found camphor a most effective remedy dissolved in spirit of anniseed. In these cases the fluid camphor will most likely prove very useful. In his Dictionary he has recommended camphor in very many diseases.

Dr. Copland had given camphor in fifteen-grain doses, and up to forty grains in twenty-four hours. In small doses it is a cooling, refrigerant medicine; in three grain doses it is restorative and soothing, and slightly soporific; above five grains it is stimulant; in large doses it produces delirium and cerebral excitement—hence its benefit in coma and the last stage of fever. Crude camphor will produce ulceration when in contact with a mucous surface. When mixed with mucilage, &c., it is quickly absorbed, and passes off by the lungs and skin; very little by the kidneys. When injected into the bowels, it produces its effect very rapidly. When the puerperal fever was so fatal twenty years ago in the lying-in hospital, camphor was tried in large doses, from ten to fifteen grains, repeated every five or six hours, and only three deaths afterwards took place. Opium was combined with it, and turpentine injections occasionally administered. Camphor is a capital remedy in worms, particularly when they are thread-worms. He has often been in the habit of giving camphor with carbonate of magnesia, rubbed up with or without mucilage. But in this state of permanent solution, the remedy can display its efficacy at once; it is therefore an important improvement. *Lancet; Nov. 20, 1847, p. 548.*

3.—APPLICATION OF CHLOROFORM IN TYPHUS FEVER.—By Dr. A. Fairbrother.

[The following case occurred in the Bristol General Hospital.]

The patient, a female about 18 years of age, exhibited all the symptoms of a bad case of typhus fever. The usual remedies were tried for a fortnight without any beneficial effect. The unfavorable symptoms continuing, the patient being delirious, and the system worn out for want of sleep—in fact her life was despaired of—it occurred to me that chloroform, being used in operations to produce a sedative effect, if the patient could be kept in the same state continuously, it would reduce the too rapid circulation of the blood through the lungs, relieve the difficulty of breathing, and thus become efficacious in subduing the excited state of the brain and system in such cases, or in others of inflammatory nature. I accordingly tried the experiment, commencing with ten minims administered in a cup-shaped sponge, inclosing the mouth and nostrils, but occasionally admitting atmospheric air. About ten minutes were occupied in the inhalation. The soporific state was induced in a few seconds, and continued for about half an hour. In about four hours, the chloroform was again administered, the quantity being somewhat increased, and the inhalation was now continued for half an hour. The patient slept from this time (12) till 4. She took a little porter and again slept till 8 o'clock. The application was then repeated, and has been continued for several days; the quantity of chloroform being gradually increased to twenty-five minims, and the time of inhalation to forty minutes, guided in these particulars by the state of the pulse.

No other medical treatment has been adopted; the only other means used being the sponging of the body with tepid water, and applying cold pads to the head. The system was supported by beef-tea, porter, wine, &c., and to allay thirst, toast and water. The patient is now recovering; the pulse is reduced from 130 to between 70 and 80; the tongue is clean and moist; the skin cool; diarrhœa has ceased; the appetite is returned, and the countenance is regaining its natural aspect.] *Med. Gaz., Jan.* 21, 1848, p. 102.

4.—CONTAGION OF YELLOW FEVER

[A writer in the British and Foreign Medico-Chirurgical Review, arrives at the following conclusions from an examination of the evidence hitherto offered on this subject.]

1. That yellow fever is decidedly contagious on some occasions.

2. That the proofs of the universality of this property are defective. Importation can seldom be proved; inoculation is impossible, and the disease requires a peculiar susceptibility of constitution in order to act.

3. That it is not safe to generalize from the first observation, and to conclude that yellow fever is at all times contagious because it is undoubtedly so sometimes, for these reasons:

a. Because there are fevers undistinguishable by symptoms from contagious yellow fever, which certainly are not contagious.

b. Because we are not sure how far contagion may not be an accidental property impressed on a poison by contingent circumstances, or may be only the development of a property of self-reproduction always possessed by the morbid poison, but generally in so slight a degree as to be inappreciable. If the former opinion be correct, yellow fever is both contagious and non-contagious; if the latter, it is also in the majority of cases non-contagious, in the conventional meaning of the term.

4. That contagion is only a property accidentally impressed on the yellow-fever poison appears probable.

a. Because in no other way can we explain the extraordinary discrepancies and opposing statements of men, whose honesty of purpose is undoubted.

b. Because it is almost a necessary assumption, in order to explain certain facts in the history of yellow fever.

c. Because it is in accordance with analogous phenomena manifested by other morbid poisons.

d. Because there is really some direct proof of it in the apparent development of fever on board ships with clean holds, and removed from the influence of the land.

5. That if this conversion of a non-contagious into a contagious poison be denied, there is no alternative but to admit the existence of a specific contagious yellow fever.

6. That the doctrine of a specific contagious yellow fever is alone supported by the fact that it destroys the necessity of admitting the convertibility of poisons, a circumstance considered by many observers as in the highest degree unlikely and unphilosphical.

British and Foreign Med. Chir. Rev., April 1848, *p.* 388.

5.—SCROFULA.—By Dr. King.

[The following propositions laid down by Dr. King are illustrated and supported by numerous facts.]

Prop. 1. The grand source of scrofula is the direct hereditary principle.

2. Scrofula is also hereditary in the collateral branches when it is latent in the direct ones.

3. When second marriages take place, if both parents are healthy, the children will be unhealthy; if either parent be scrofulous, the children will be scrofulous.

4. Persons who have been scrofulous in youth may appear to have been cured, and to have got into good health, but the constitutional taint remains, and the children will be scrofulous.

5. Phthisis is a form of the scrofulous constitution, and its most fatal form. It is the great sledge-hammer. Sydenham had advanced so far in pathology as to call phthisis "scrofula in the lungs." Portal was of opinion that congenital phthisis, "phthisie d'origine," was scrofulous. Bayle and Laennec say the same, but less decidedly, which to our eyes appears strange. An eminent writer of the present day may be quoted as a proof that medical men have not at present very clear ideas upon this subject. He says scrofula is a form of cachexia—*i.e.* cachexia is the cause of which scrofula is the effect. It would be more correct to say, scrofula or the scrofulous constitution, is the cause of which cachexia is the effect. Cachexia is a form of scrofula. Cachexia has many causes, of which a very important one is scrofula.

6. Scrofula and phthisis coexist in the same family. More than half the scrofulous patients have parents or ancestors who died of phthisis. Of 84 cases in the hospital of St. Louis, at Paris, more than half had consumptive parents. All the patients in the hospital at St. Louis who died of the various forms of scrofula, had tubercles in the lungs. They sometimes die of other forms of scrofula, but the most common cause is phthisis, or tubercles in the lungs. They often recover from the other forms of scrofula, and then die of phthisis; and for this reason the most experienced medical men are very cautious in their mode of curing local scrofulous affections, for fear of metastasis to the lungs. They always endeavor to do it upon an alterative—*i.e.*, a constitutional principle; so that the cure may be the effect of an improved constitution, and the improved constitution the effect of the treatment.

7. Persons who are scrofulous in youth sometimes become strong after puberty; but the taint remains, and the children are scrofulous. The parents try to conceal the scrofula of their youth, which makes it difficult for the physician to trace the constitution of the child.

8. Parents who do not appear to be scrofulous themselves, but whose

brothers or sisters are so, have scrofulous children. The family taint seems to pass through them to the children.

We shall now endeavor to point out certain causes which seem to originate scrofula, or the scrofulous constitution, or poison, independent of hereditary taint.

Cause 1.—The first cause is syphilis; which, in many cases, is obvious; and in others, when the parents conceal it, it can only be inferred. If a parent has had both syphilis and scrofula, the poison is doubled. The eruptions, ophthalmia, ulcerations, and caries, of the two diseases, are often very similar; but, as syphilis is cured by mercury, and scrofula not, the result of treatment is a sure test of the nature of the disease. Syphilis is accidental, contagious, and curable. Scrofula is constitutional, not contagious, and incurable, or, at least, difficult of cure. Scrofula always existed. Syphilis did not exist in Europe till about A.D. 1500. The disease derived from syphilitic parents is not primary but secondary syphilis, syphilitic cachexia, or scrofula. Spain has been overrun by this disease subsequent to the introduction of syphilis. The antiphlogistic treatment of syphilis, instead of the mercurial, is a cause of scrofula, because the cure has not been radical.

Cause 2.—The second originating cause of scrofula is the excessive abuse and indulgence of the sexual instinct. One instance will illustrate the principle:—All the children of a family had scrofulous affections: hæmoptysis, ophthalmia, pulmonary tubercles, worms. One little girl had abscess in the left sub-maxillary region, was of pallid complexion, with large mouth and decayed teeth. The chief cause appeared to be the early sexual dissipation of the father. Cases like this, as well as those which are of syphilitic origin, illustrate the remarkable and forcible expression of Job, (c. 20, v. 11) "his bones are full of the sin of his youth." This is one of the many ways in which wealth may prove a curse. Wealth is power, and the first tendency of power is to abuse itself, in all the modifications of which that power is susceptible.

Cause 3.—A third originating cause of scrofula is *premature* indulgence of the sexual instinct, and *premature* marriage. If the offspring are to be healthy, strong, and vigorous, no man ought to marry before the age of 25. The secretion of the seminal fluid, like all other parts, is and must be subject to laws which decide its health and vigor. The secretion should not be too rapid or frequent, and it should also be spontaneous, *i. e.* the natural effect of a healthy organism, and not of a mere mental action or effort or imagination.

Cause 4.—A fourth originating cause of scrofula is marriage too *late* in life. The debility produced by early sensuality may be in some measure remedied by moderation, restraint, and time, by change of mind, thought, imagination, desire, and intellectual occupation. But the debility produced by old age can never be remedied. The generative faculty is said to begin to decline about the age of 45, which may be called its culminating point. It then begins to decay slowly at first, and more rapidly afterwards. Those who marry late in life may have one or two children strong, but every child is weaker than the preceding ones, and the youngest are the weakest. The old man's child is become a proverb for visible debility stamped upon its physiognomy. Many of them die at birth. Some are precocious in childhood, and then suddenly fade, and become effete and stunted, like the withering and dropping off of fresh fruit in autumn;—they are born out of season. The period of weak fecundity in woman commences about forty. After this time pregnancy is often a delusion, or there is imperfect conception and miscarriage, or the child perishes at birth, or, if reared it is delicate and scrofulous.

Cause 5.—A fifth originating cause of scrofula is disproportionate age and unequal vigour. When the father is younger than the mother, it may be a cause of scrofula.

Cause 6.—A sixth originating cause of scrofula is paralysis, epilepsy, lunacy, and other diseases of the brain. *Med. Gaz., Nov.* 5 *&* 19, 1847, *p.* 103, 896.

6.—SCURVY.—By Dr. A. B. Garrod, Assistant Physician to University College Hospital, London.

[It seems to have been fully proved that whatever circumstances may influence the production of scurvy, its immediate cause is to be sought for in the nature of the food; in the absence or deficiency of one or other of its *organic* or *inorganic* constituents. Dr. Garrod points out many objections to the opinion that a deficiency of any of the *organic* constituents of the food produces scurvy; and states that from minute researches into the composition of scorbutic or antiscorbutic articles of diet, and into the state of the blood in scorbutic patients, he has been led to the following conclusions:—]

1st, That in all scorbutic diets, *Potash* exists in much smaller quantities than in those which are capable of maintaining health. 2d, That all substances proved to act as anti-scorbutics contain a large amount of *Potash*. 3d, That in scurvy the blood is deficient in *Potash*, and the amount of that substance thrown out by the kidneys less than that which occurs in health. 4th, That scorbutic patients will recover when *Potash* is added to their food, the other constituents remaining as before, both in quantity and quality, and without the use of succulent vegetables or milk. 5th, That the theory which ascribes the cause of scurvy to a deficiency of *Potash* in the food, is also capable of rationally explaining many symptoms of that disease.

[The first proposition is proved by an examination of the dietary of the Crediton Union, (*see Prov. Med. and Surg. Jour., June*, 1847). After giving a statement of the amount of potash contained in various articles of food, Dr. Garrod says,]

If we estimate the amount of potash taken by the inmates of this workhouse, we shall find the men's food to contain about 186 grains, and the women's about 181 grains. This amount would be much influenced by the mode in which the potatoes were cooked; if not too much boiled, and with the skins on, they would contain a much larger amount of potash than if boiled without their skins, and much done. Under this diet the inmates remained healthy; but, owing to the scarcity of potatoes, boiled rice in equal weights was substituted, and in a few months the inmates became scorbutic. When the change was made, the weekly amount of potash taken by the men was about 51 grains, and by the women 46 grains, or a reduction of more than two-thirds took place. Rice and potatoes do not differ much in their composition, except in the salt of *potash* contained by the latter. Both contain starch and vegetable albumen. In the weekly diet list for the military prisoners at the Milbank Penitentiary, when they were subject to scurvy (see Dr. Baly's paper in *London Medical Gazette*, Vol. I. 1841–2,) we find the amount of potash taken by each prisoner during the first three months of imprisonment to be about 44 grains; during the second three months, about 50 grains; after six months, about 68 grains. At present, when potatoes are added, the weekly amount of potash is from 210 to 230 grains, and no case of scurvy has arisen since the change.

[Several other confirmatory facts are adduced, and Dr. Garrod proceeds to show that,]

All bodies proved to be anti-scorbutic contain a large amount of potash.—All fruits contain this substance in abundance, as oranges, lemons, limes, grapes, gooseberries, &c., and these are all highly anti-scorbutic. Potatoes also, which perhaps are the most valuable as an addition to a dietary for the purpose of preventing scurvy, and owing to the scarcity of which article this disease has been so prevalent within the last two years, contain, as the above analyses prove, a very large amount of potash, and when boiled (not too much, and unpeeled), still retain most of that ingredient; this also accords with the fact, that potatoes, when cooked in the ordinary way, are anti-scorbutic, and at the same time explains why the hard core of that tuber, which is so much liked by the Irishmen, is most powerful in preventing the occurrence of scurvy.

[Milk and fresh meat, cabbages, onions, turnips, spruce beer, &c., also contain considerable quantities of potash. As to the condition of the blood, Dr. Garrod found that the blood of a scorbutic contained little more than one-third of the amount of potash that is contained in healthy blood. To come to the practical application of these facts, Dr. Garrod shows that,]

Scorbutic patients, when kept under a diet which gave rise to the disease, recover, when a few grains of Potash are added to their food.—In several cases which came under my care, the treatment consisted in the daily administration of a few grains (from 12 to 20,) of some salt of potash, mixed with syrup and water. Sometimes the bitartrate, at other times the acetate, and also the carbonate and phosphate were used. All the salts appeared to act alike, and I have little doubt but the chloride of potassium would be found equally efficacious. When the cases were thus treated, all vegetables, milk, and malt liquors were strictly prohibited; and yet the patients rapidly recovered. Other cases were treated by fresh vegetables and milk: these also recovered, but certainly not more quickly than those from whom these substances were withheld, and potash salts substituted. On looking over the works of several writers on scurvy, I have frequently found that some *Potash* salt has been administered with *marked* benefit; thus, nitre has been recommended, nitre dissolved in vinegar, the bitartrate of potash, the oxalate of potassa; but the efficacy has always been ascribed to the acid contained in these substances, and no attention has been paid to the base.

The theory which ascribes the cause of scurvy to a deficiency of Potash in the system, is capable of explaining some of its symptoms.—Both soda and potash are constant constituents of the animal body, and it appears that they are not capable of replacing each other; for example, we always find the potash to exist in large quantities in the ash of muscle, soda in very small quantities (Berzelius, Liebig); in the ash of the blood we find the relation reversed. It appears also, that the muscular system requires the presence of potash, and we should therefore expect to find that where there is a deficient supply of this base, the effect would soon be manifested in the functions of that system. This we find to be the case in scurvy; without any amount of wasting of the body, we find marked muscular debility, and this perhaps is one of the earliest symptoms of the disease.

Conclusion.—I have ventured to make public this theory of the cause and nature of scurvy sooner than I otherwise wished, both on account of the difficulty of procuring cases of this disease at the present time, and from the conviction that its being made known to the profession at large would be the most ready mode of having it confirmed or disproved. If true, it will be seen at once that its applications will be of the utmost importance, and the occurrence of scurvy, both at sea and on land, can be most readily prevented, by the introduction of a few grains of some potash salt, as the phosphate, chloride, tartrate, &c., into the food, or by these being taken in a separate state. At sea, its applications would be invaluable, from the cheapness, stability, and the small space occupied by the remedy, when compared with lime juice; from its being at all times to be procured from the ashes of wood or plants, especially tobacco, which contains it in abundance. If found to be a mere hypothesis, I have this apology to make, that in my mind it accounts better for the occurrence of this disease than any other yet offered; and it will still be an interesting fact, that *Potash* always accompanies the *real* antiscorbutic principle, was found deficient in scorbutic blood, and that several cases of scurvy rapidly recovered under the use of some of its salts, without the administration of any other remedy, dietetical or medicinal. *Monthly Jour. of Med. Science, Jan. 1848, p. 457.*

7.--THE BLOOD AND URINE IN GOUT, RHEUMATISM, AND BRIGHT'S DISEASE.—By Dr. Garrod.

[Dr. Garrod says that the balance of opinions is in favour of the humoral pathology of gout, but that up to the time of his late researches, there had been no proof of the nature of the materies morbi. He says that—]

1st. In gout the blood always contains uric acid, and that this body can be crystallized from that fluid in the form of urate of soda. 2d. That the uric acid is diminished or absent in the urine immediately preceding the gouty paroxysm. 3d. That in patients subject to chronic gout with tophaceous deposits, the uric acid is always present in the blood, and deficient in the urine, both absolutely and relatively to the other organic matters, and that the chalk-like deposits appear to depend on an action in and around the joints, &c., vicarious to the "uric acid secreting function" of the kidneys. 4th. That the blood in gout sometimes yields a small amount of urea (no albumen being present in the urine.)

Quantitative analyses and observations in favor of these conclusions were then detailed, and also the method used for separating the uric acid and urate of soda from the blood. Dr. Garrod thought it probable that the presence of a small amount of urea in gouty blood might be the cause of one of the symptoms which distinguished gouty from rheumatic inflammation, —viz., the slightly œdematous condition of the inflamed part. The author next spoke of some experiments made on the blood of the sheep, and of birds. Sheep's blood was not found to contain uric acid, and even from the blood of the pigeon, whose urine consists entirely of that substance, none could be obtained. Human blood, from patients in tolerable health, was always found to yield a trace of uric acid, but a quantity exceedingly minute, compared with the amount in gouty blood. The next researches were made on patients suffering from acute rheumatism, and it was found that rheumatic blood contains no more uric acid than the healthy fluid, and no urea can be extracted from it. Analysis made on the blood and urine in Bright's disease appeared to show that in albuminuria: 1, the blood always contains uric acid, but that the amount of this substance is subject to great variation; 2, that urea exists in large quantities in the blood, (which has been proved long since,) and that there appears to be no relation between the amount of the urea and uric acid; 3, that the kidneys are always deficient in their power of throwing off urea, but that, with regard to the uric acid, their excreting function is sometimes much injured, at other times little affected.

In conclusion, the author thought that the results detailed in the communication led to the inference, that uric acid is not a product of the action of the kidneys (as has often been supposed), but that it is merely excreted from the system by these organs; also that the excreting function of the kidneys, for the solid portion of the urine, is not simple, but that the urea and uric acid are separately eliminated, and that one of these functions may be impaired or destroyed, the other remaining entire; it appears also probable that, as in albuminuria, "the urea excreting function" being chiefly impaired, we find a vicarious discharge of this body in the dropsical effusions; so in gout the "uric acid excreting function" being defective, the tophaceous deposits are produced by a similar vicarious discharge of urate of soda. Gout would thus appear to depend on a loss of power, temporary or permanent, of the "uric acid excreting function" of the kidney; the premonitory symptoms, and those also which constitute the paroxysm, arising from an excess of the acid in the blood, and the effort to expel this "materies morbi" from the system; an undue formation of this compound favouring the occurrence of the disease; hence the connection between gout and uric acid calculous disease, and the influence of high living, want of exercise, &c., in inducing it. Thus also the hereditary nature of gout, and its frequent occurrence in low states of the system can be explained—facts which are generally regarded as militating against the humoral pathology of the affection. The above researches appear also to remove acute rheumatism from gout, and to render it probable that they are only analogous in affecting similar structures.

Dr. Williams expressed his gratification at the highly interesting and satisfactory results of Dr. Garrod's researches, which were the more important as establishing, on the basis of chemical demonstration, the true nature of gouty disease. It had long been a matter of high probability, that the ancient notion, that gout depends on a morbid matter in the blood, was correct; and many recent observations on the causes, symptoms, and sequelæ of the disease, had led to the legitimate inference, that this matter is lithic acid. This he (Dr. Williams) had learnt and taught for many years past. But the demonstrative proof,—the detection of this acid in the blood,—although often sought, had never been accomplished, and to Dr. Garrod was due the entire credit of having first achieved that desideratum. The deficiency of lithic acid in the urine in the commencement of a fit of the gout, in common with other febrile movements, had been noticed by Berzelius; and its abundant reappearance on the decline of the paroxysm had been a matter of common remark among practitioners. But Dr. Garrod's observation, that even when present in the blood, lithic acid is secreted in proportions varying from those of the other constituents of urine, was a fact interesting in a physiological as well as in a pathological point of view; although he (Dr. Williams) doubted that the explanation was such as the author suggested. He (Dr. Williams) thought that it would be taking too narrow a view of the origin of gout, to refer it to defective excretion only. Many facts had occurred to him which induced him to ascribe it also to imperfect assimilation, particularly of various proteinaceous nutriments of a low kind (such as cheese, salted meat, and pastry) which weak assimilative powers are unable to convert into blood, and which therefore decay into lower proximate elements. This corresponds with the experiments of Magendie, on the influence of azotised food in augmenting the animal matter in the urine; and Dr. Williams stated that he had in his own person experienced a proof in point; in finding some gouty symptoms invariably ensue after eating cheese for several days. On one other subject Dr. Williams could not quite agree with the author,—that there is no pathological resemblance between gout and rheumatism. Practitioners generally acknowledge, that although in well-defined cases they are quite distinct, yet in others they appear to graduate into each other; and both in the copious deposits of lithic acid and its compounds, on the decline of acute rheumatism, and in the unquestionable power of colchicum and alkalies in the cure of the disease, he (Dr. Williams) found a resemblance to gout, not to be effaced by the failure to detect an augmented quantity of lithic acid in the blood. In many cases of acute rheumatism, the state of the urine plainly showed that lithic acid was excreted in abundance, and a continuance of Dr. Garrod's researches would probably discover in the blood in this disease, if not lithic acid, something akin to it, and ready to be converted into it. *Med. Gaz., Feb.* 25, 1848, *p.* 337.

8.—USE OF PHOSPHATE OF AMMONIA IN GOUT AND RHEUMATISM.—BY DR. EDWARDS, Physician to the Bath Eastern Dispensary.

[Phosphate of ammonia, which appears to have been first recommended as a remedy in gout and rheumatism by Dr. Buckler, of Baltimore, (See Retrospect, Part xiii., Art. 82,) has never come into general use in this country. Dr. Edwards regards it as an exceedingly valuable medicine; and thinks that it acts beneficially in gout and rheumatism by decomposing the uric acid which is formed in excess in these diseases. He says:]

The phosphate of ammonia having been introduced into the system, meets with the uric acid, or urate of soda, and becomes decomposed; the phosphoric acid combines with the soda of the urate, forming a most soluble salt. It is thus seen that a most insoluble salt is exchanged for one as oppositely soluble. This, however, is not all the aid we get from it; for this new product, the phosphate of soda, according to the valuable researches of Baron Liebig, has a remarkable effect upon uric acid, inasmuch as he has shown that it has the power of rendering it soluble with facility in water.

The before combined uric acid being set free, part unites with the ammonia of the phosphate, and the remainder is rendered very soluble at the high temperature of the body, through the agency of the formed phosphate of soda. Liebig states, "at a higher temperature, the phosphate of soda dissolves a larger amount of uric and hippuric acids than at a lower." The ammonia of this medicine is thus seen to serve a most important purpose in uniting with part of the uric acid, and forming a compound far more soluble than the acid itself, as it is a fact well established by Dr. Prout, that uric acid requires 10,000 parts of water at 60° for its solution, whereas the urate of ammonia dissolves in 480 times its weight of the same fluid, or, in other words, is more than twenty times as soluble. By these means, the free and combined uric acid existing in the system in these diseases will be dissolved and rendered capable of easy elimination by the kidneys, and the pains and other distressing symptoms occasioned, as Dr. Prout states, by the derangement going on in those "secondary assimilating processes" by which the nervous substance and immediate appendages, as also the fibrinous portion of the muscles are produced and maintained, will be shortly subdued, and by strict attention to the causes which give rise to that abundance of uric acid in the system, the disease will be altogether checked. If dyspepsia is prominent, and the digestive organs cannot assimilate the usual quantity of nitrogenized food which is introduced into them, it should be lowered, as likewise in those cases where too great a quantity is taken and assimilated, compared to that which the waste of the system requires. Again also, a frequent cause of this deposit exists in the arrest or diminution of the cutaneous excretion, whereby the kidneys act as compensating agents, and the system at large becomes impregnated with this nitrogenized excretion.

As I have previously stated, I have now used this remedy, and with great success, in almost every variety of gout and rheumatism. In acute articular rheumatism I have not exhibited it during its more inflammatory stage; but after this has been subdued somewhat by the usual antiphlogistic treatment, it very speedily relieves the pains, and in the majority of cases prevents fresh joints from being attacked. I cannot speak positively from sufficient data at present, but I am inclined to believe that the chronic form which is not unfrequently left behind from the acute, may often be obviated. I feel convinced I have prevented, by administering this salt prior to the coming on of the inflammatory symptoms, several times, attacks of gout and rheumatism, and this in individuals disposed to their invasion. In *chronic articular rheumatism*, I have used it after the bowels have been well cleansed by calomel or other purgatives, or if the constitution is vigorous, the vascular action strong, and heat high, after venesection, and I have got rid of these attacks much sooner than formerly. In muscular rheumatism, whether of the acute or chronic form, I have employed this remedy with greater success than in any other. After the action of the intestinal canal was somewhat regulated, I have generally been able, without further preface, to administer it in lumbago, pleurodynia, ischiogluteal rheumatism, epicranial, (cephalodynia,) cervical, (auchenodynia,) and facial rheumatism. In these I have seen it of particular service, and in one case of rheumatic ophthalmia, after the inflammatory symptoms had been reduced, and the patient was annoyed with the pains about the eye and brow, in which I

administered it, it was attended with alleviation and subsidence ol
pains within sixteen hours of being commenced. I am not prepar
assert that this salt will prove of benefit in those cases of chronic rhe
tism, where the disease has already affected the cellular tissue, boı
cartilage, and occasioned such appearances of morbid anatomy as
been described by Hasse. It may relieve, but I cannot believe it posit
curative.

With respect to gout, my opportunities of applying this remedy
been less numerous than in rheumatism, yet numerous enough to eı
me to speak with certainty of its great value as a remedy; when giv
the doses I have mentioned, it produces but little sensible operation be
that most important of all, the gradual (in two or three cases I have se
act almost instantaneously,) diminution of the distressing symptoms.
this view I have always prefaced its use by well cleansing out the b
with proper aperients, and then ordering the phosphate every eight
in simple water, or occasionally in conjunction with a bitter infusioı
spirits of nitre, the best infusion perhaps being that of the serpentaria
determines to the skin. Attention both before and during the admir
tion of the phosphate to the due performance of the various function
nected with the primary assimilating processes is of great momen
slight alterative aperient of mercurial pill and compound rhubarb pill,
every other night, twice or thrice, has answered well. I have s
meddled with the inflamed part beyond ordering perfect rest, and ex
perspiration by means of fleecy hosiery or flannel, covered over wi
silk, occasionally a light anodyne poultice or narcotic fomentation;
course a consistent diet, and abstinence from everything irritating b
body and mind, were points duly remembered. In the third case in
I employed the salt, it was strikingly beneficial. A poor man, a disp
patient, a very gouty subject, had had an attack for two or three
being confined wholly to his bed or arm-chair. He had tried, and
previously used, most of the most renowned remedies, with little
relief. On a Wednesday afternoon he commenced taking the phosph
ammonia, (ten grains every eight hours,) and on the Friday morning
ing he attended me at the dispensary, walking each way, and inforn
he had lost all pain, and that the swelling and stiffness were rapid
siding. To use his own words, "the second dose of this last mixt
acted like a charm." On the Tuesday following he began his work
as a mason. I ordered his continuance for a short time of the sal
bining it with a bitter infusion, and the regular use of a mild aperie
Provincial Medical and Surgical Journal, Nov. 17, 1847.

19.—QUININE IN ACUTE RHEUMATISM.

[Most of our readers are probably aware, that among other reme
rheumatic fever, sulphate of quinine has been recommended (see
spect, Part XV., p. 30), a mode of treatment contrasting strongly w
by profuse bleeding, or that by mercury, and yet one, it would appe
successful. The quinine plan of treatment is followed by M. Tr
of the Hopital Neckar. The following is from a clinical lecture :—I
recently in that hospital,—one of rheumatic fever, with effusion
knee-joint, but without any cardiac affection,—sulphate of quinine
ministered, unpreceded by any other treatment. In four days a
amelioration took place; from fifteen to thirty grains of the medici
taken per day. In a few days more the patient was able to walk;
sion and fever had disappeared. Here, then, was a rapid cure of rl
fever; however, that disease mostly lasts for two or three weeks
it proceeds in its usual manner it may be combatted in the same w
termittent fever. If the quinine be suspended as soon as an evid

fit is produced, there is a danger of relapse, just as when that medicine has arrested an ague fit. The quinine must therefore be given every two, three, or four days, and continued after the pains have ceased. We must enter into the belief that rheumatism is not a local affection, and that an individual is not cured when the pains are stopped. Whilst the patient sweats, whilst his appetite does not return, and there is something wrong in his pulse, the rheumatic diathesis must be treated. When we employ bloodletting, we do not treat the rheumatism; we are only occupied with the diathesis by virtue of which the solids and liquids take on the rheumatic affection. When we make use of quina, we act upon the entire economy, on that particular condition of it known as the diathesis, whence come the pains and other phenomena presented by the joints. The diathesis may persist for two or three years after all manifestation of the disease has ceased, and we are obliged to act against this diathesis as we do in the case of the syphilitic or scrofulous. Such a persistence, or latency, is also seen in the marsh miasm, where a person having once been in an infected locality, may, at an interval of years, get an attack of ague, although in a district quite free from the visitations of that malady. Thus we see that a patient may be cured of all the outward symptoms of a disease, and yet the germs of that disease lurk, as it were, within him, ready to be developed, and to manifest themselves, whenever, from a concurrence of circumstances, they are kindled to a new life. So also, as in ague, the germs of a disease may be imbibed into the system, and lie hidden for a long period, but yet retain their power of being developed into evident disease. Such is also seen in the eruptive fevers, and we may suppose the same thing possible in other diseases. *Lancet, March* 11, 1848, *p.* 288.

10.—USE OF VINEGAR IN RHEUMATISM.—By J. C. Atkinson, Esq., Westminster.

[Mr. Atkinson says that common vinegar has been successfully used by him in various forms of arthritic, rheumatic, and even neuralgic maladies. He remarks,]

I was first led to employ this auxiliary comestible, if I may so term it, in cases where the alkaline treatment with colchicum had totally failed. Persons whose digestive organs were deficient in the assimilating process, arising from imperfect secretions, and producing foulness of breath and fœtid eructations, were much benefitted by the administration of vinegar. Constant pains in the epigastric region after eating or drinking, no matter what, although ordinarily digestible, are likewise symptoms which indicate its adoption. One characteristic of its successful use is when all cloudiness of urine disappears. I may further observe, that it is rarely in the young that this remedy is required; those of middle age, whose constitutions have been injured by dissipation, will find great advantages from the use of the vinegar remedy after the colchico-alkali treatment has been proved of no utility. The distilled vinegar, or dilute pyro-ligneous or pyro-acetic acid, may be administered in the following manner:—Acetic acid, one drachm; tincture of jalap, twenty minims; tincture of orange-peel, one drachm; camphor mixture, sufficient for a draught, to be taken twice or thrice a day. The quantity of vinegar may be diminished or increased according to the feelings of the patient and the effect produced. *Lancet, Nov.* 13, 1847, *p.* 529.

11.—USES OF COD-LIVER OIL.

[According to the article from which we have taken the following extract, cod-liver oil appears to have been known to Perceval in 1771, as a remedy in chronic rheumatism; and known also to Michaelis a short time after. But it was Dr. Schenck who called the attention of the profession to this remedy, by the publication, in the year 1822, of a series of cases of chronic rheumatism successfully treated by him. For arthritis and scrofula, as well as for rheumatism, Dr. Schenck considered the oil as specific. Notwithstanding the publication of the experience of this gentleman and of many others, cod-liver oil, as our readers are aware, did not come into general use until a very few years ago. The author of the paper says—]

To establish some order in the enumeration of the long series of affections, for which the fish liver oil has been tried with more or less success, we copy from M. Jongh the following table.

Chronic rheumatism.—According to Alexander Knood von Helmendstreit, Amelung, Brefeld, Basse, Fehr, Galcoma, Mall, Moeunig, Munzenthaler, Michaelis, &c., who have all published their own observations concerning the fish liver oil in chronic rheumatism, this medicine possesses such an efficacy in this disease that surpasses in their eyes all other remedies, without excepting the most lauded anti-rheumatics. This opinion of different doctors, who have all experimented by themselves, cannot be taxed with exaggeration, if it is considered that amongst these cases there are found numerous cases of rheumatic patients being cured, who after many years of suffering, and usages of all sorts of remedies, have lost their strength and despairing of cure, were completely cured by the aid of the fish liver oil.

Rheumatic sciatica.—The fish liver oil did not prove less efficacious in this form of chronic rheumatism which is generally distinguished by its obstinacy; this is verified by the observations of MM. Knood von Helmendstreit, Rust, Amelung, Munzenthaler, Settenger, and Spitter.

Scrofulous diathesis.—Although there exist various observations in support of its excellence for certain severe forms of confirmed scrofula it requires something, candidly speaking, which will prove its efficacy in the scrofulous diathesis with certainty. The cause of this doubt ought not to be looked for in this circumstance, that the liver oil is less applicable in the scrofulous diathesis than in certain of the more severe forms of scrofula, but that the greater part of physicians are in the habit of only publishing their observations of the more severe cases. But if we consider that the scrofulous diathesis is the principle from which emanate, by the accession of aggravating circumstances, all the numerous and often dangerous forms of scrofula, and that the liver oil is in our eyes a true specific for the more severe forms of this affection, it is evident that this medicine is that which ought to counteract this principle with most certainty. Such is the opinion of M. Brefeld and Dr. Galama, who says that the liver oil is the most efficacious remedy for the scrofulous diathesis, and for no matter what form of confirmed scrofula.

Confirmed scrofula.—Amongst the facts relative to the use of the liver oil in some of the manifold forms in which confirmed scrofula is presented, the most remarkable are those which Drs. Brefeld and Roppe have made known, the result of which is that this medicine universally is fit for all forms and kinds of scrofula. It is also nearly the unanimous opinion of all those who have employed the liver oil that it merits the first place among anti-scrofulous medicines.

[After adverting to the influence of the oil in cases of swelling of the lymphatic glands, scrofulous ulcers, and in the chronic exanthemata, the writer proceeds:—]

Rachitis.—The fish liver oil is, without exception, the best remedy for rachitis, in all its stages, and under whatever form it presents itself; such is the nearly unanimous opinion of the German and Dutch physicians, who affirm with one accord that it is much superior to any of the so-called anti-rachitic remedies. According to Dr. Schmidt, who has most insisted on the advantages of this medicine, in twenty-one rachitic patients which he had treated at the time when he made known his results, thirteen were cured, four were in process of being cured; as to the others, judging from the progress which they had made for the little time they were under treatment, a very favourable prognosis might be drawn.

General conclusions.—The chemical researches have taught us that the fish liver oil ought to be considered as a very compound medicine. Greasy neutral matter, bilious matter, iodine, phosphorus, each of them well-known as possessing great therapeutic efficacy; also a certain number of organic elements, such as butyric acid, gaduine, and some others, the medicinal action of which is less known; finally, various inorganic salts, as the phosphate and sulphate of lime, chloride of lime, phosphate and sulphate of magnesia, are the substances of which it is composed. But it may be asked to which of these components does the oil owe its special virtues? Is it to the iodine, fatty matters, phosphorus, or other principles? If it is considered that the diseases for which the liver oil is administered with success, it cannot escape any one that there are in each of them various indications to fulfil to obtain a complete cure. For the most part, there is debilitated digestion to be excited, nutrition to be regulated, secretions to be established, and the lymphatic system to be stimulated; while on the other hand, the modifying of the organic nervous system is presented as one of the most important indications to be fulfilled. Who does not know that neither the bilious matter, nor the fatty matter, nor the iodine, nor any other principle, whatever it may be, taken alone, is capable of satisfying at the same time all these indications, and that it is not to any of these substances in particular that the fish liver oil owes its medicinal properties, and the faculty of fulfilling so different and so numerous indications, but that it is by the union and co-operation of, if not all, at least the greater number of these substances? In this state of things, the active principle of the fish liver oil cannot be discussed in particular, like the active principle of cinchona; but attention ought to be paid, if not to all, at least to the principal elements of the oil, as each of them, satisfying special indications which the diseases for which this medicine has been proved efficacious present. Quite in accordance with the fact that it is not one principle alone, but rather various particular elements which concur for the cure of rheumatism and scrofula, it appears likely that some of these principles particularly enjoy a more decided therapeutic effect. Therefore since the indications to be fulfilled for the cure of these diseases are not all of the same importance, it follows that the attention ought to be turned to the more active of these principles which fulfil the more important indications. In fine, if the results of the chemical researches and of other medical researches be compared, which is the object of this work, here is the result.

The medical researches having proved that the black fish liver oil is more efficacious in rheumatism and scrofula, than the other species, and the chemical researches having shown, on the other hand, differences, if not qualitative, at least quantitative, between the three kinds of oil examined, it follows that the principles that are in greater proportions in the black oil than in the other two kinds, ought to be considered as those which best fulfil the principal indications. Therefore it is not the neutral fatty matters, which are found in nearly equal quantities in the three species, nor the iodine, nor the phosphorus, nor the organic salts, which are found in greater quantity in the pale oils than in the black oil, which can be considered as more efficacious than the other principles for the cure of rheumatism and scrofula. It appears, then, that it is to the bilious matter and butyric acid, rather than the other principles, that the greater part of the therapeutic effect can be principally attributed, for they are the substances which are found in the greatest quantity in the variety of oil proved to be the most active.

As to the matter unknown up to this time, and which M. Jongh first proved the existence of, in the product of the analysis of the different species of Gadus, and to which he applied the name of Gaduine it does not appear on account of its insolubility, at least in the condition in which it was

NERVOUS SYSTEM.

14.—THEORY OF CONVULSIVE DISEASES, ESPECIALLY EPILEPSY.—By Dr. Marshall Hall, F.R.S., &c.

[We give the following sketch of the theory of convulsive diseases from the pen of Dr. M. Hall, which we have perused with the greatest interest. "It is evident," says he, "that the whole subject of the diseases of the nervous system requires to be observed and studied anew."]

In treating of epilepsy, says Dr. Hall, I view it as only one of many forms of convulsive disease. No forms of convulsive diseases differ more from epilepsy than the different forms of epilepsy differ amongst themselves. The two terms may therefore be regarded as synonymous, or generic.

Epilepsy, in all its forms, is essentially convulsive—that is, the *first* link of causes and effects, in this disease, is of that character. Now, the accurate experiments of M. Flourens have finally established the great physiological and pathological principle, that no physical irritation of the cerebrum or cerebellum, or of the purely cerebral nerves, or indeed of *any* part of the nervous system, except the spinal marrow and the muscular nerves, *can* produce muscular action. To my own experiments and investigations we are indebted for the fact, that these effects of irritation of the spinal marrow may be induced or excited through certain incident excitor nerves, of which, indeed, *as such*, the idea did not previously exist in anatomy or physiology.

From all this it follows, that convulsion in general, and epilepsy in particular, must arise from *two* sets of causes—first, those which excite the spinal centre, comprising the medulla oblongata and medulla spinalis *immediately;* secondly, those which excite this organ through the *medium* of its incident nerves.

The first of these causes may consist of *any* disease having its seat within the cranium or spinal canal, *so* that it may occasion irritation of the spinal centre. The second consists of *any* disorder or disease which may irritate any part of the class of incident nerves of the spinal system, whether situated in the mucous or serous membranes, or other tissues or organs. This irritation of the spinal centre, mediately, through the incident nerves, or immediately, by the actual contact of the cause of irritation, constitutes the first link of the chain of causes and effects or symptoms in epilepsy, to which I have adverted. The second link in that chain is the convulsive contraction of a certain class or system of muscles. This system of muscles is as *special* as that of the muscles of inspiration or of deglutition, excited into action by an excitant of these several functions. In epilepsy, it is certain muscles of the neck (and perhaps I may specify the platysma myoides) which are so affected. The immediate consequence of this, and the *third* link in our chain, is a compression of the jugular and other large veins of this important region, with congestion of the venous roots and capillary canals which lead to them, and of the cerebrum and other organs in which these are seated or take their origin. Thus, as the first symptom of tetanus is a spasmodic affection of certain muscles of the posterior part of the neck and of the inferior maxilla, so the first symptom of epilepsy consists in a spasmodic action of muscles, occupying, principally,—perhaps not entirely,—the anterior part of the neck, usually denominated the throat, speedily or immediately followed by a similar affection of the muscles which close the larynx, inducing the symptom which I shall designate laryngismus—so *analagous* are these two diseases of the spinal system.

The state of things arising from compression of the jugular veins (principally), I beg to designate by the term *sphagiasmus*. From this first symptom, when unfollowed by laryngismus, that form of epilepsy which may, from being apparently limited to cerebral symptoms, be designated cerebral epilepsy, arises. It is, then, the *petit mal* of the French. It is the first or *cerebral* part of that form of epilepsy, which, conjoining or superadding laryngismus or other violent convulsive affections, is the *haut mal* of the same authors. In the former there is, or may be, every cerebral symptom, as in this latter there is every spinal affection, however terrific. Laryngismus may be either a partial closure of the larynx, and therefore stridulus, or the closure may be complete. In the latter it leads to general distortion and convulsion of the eyes, face, and general frame. As a part of the epileptic seizure, of the most pathognomonic character, I must briefly notice another symptom, in this rapid enumeration of causes and effects in this malady: it is the *odaxismus*, or bitten tongue, lip, or cheek, a term already in use in the older writers. Next in the general order of convulsion—of the eyes, face, and limbs, and next, the affections of the expulsors and sphincters.

Having given this preliminary sketch of the causes and pathology of epilepsy, I proceed to details. I beg first to observe, that this dire disease, with its congeneric affections, is but the anatomy and physiology of the spinal system, such as I have established it, converted into pathology and therapeutics, by which last term I mean, not the empirical cure, but the just and rational treatment of disease. At the uppermost and lowest part of the spinal marrow, there are, as I have said, two spinal centres of the reflex spinal system, the medulla oblongata and its analogue. The first presides over the larynx, the pharynx, the muscles of respiration; the second, over the uterus, the expulsors, the sphincters. These views do not apply to epilepsy alone but to the class of convulsive diseases. Diseases of the reflex spinal system are found to' involve and affect these organs and their functions, in a manner equally special and peculiar. The knowledge of the anatomy and physiology of the system is the diagnosis, and our guide to the pathology and treatment of this class of diseases. In all these diseases, the larynx, the pharynx, the respiration, the uterus, the sphincters—the organs, in a word, of ingestion and of egestion, of exclusion, of retention, are affected in a manner which is special and diagnostic. But, of all these organs, the larynx, as it is the most immediately vital, so its affections, its partial or complete closure, are attended with the most terrific consequences. The anatomy—the nervous and muscular relations; the physiology—the various reflex arcs and modes of action, of the larynx, constitute one of the most interesting subjects of inquiry for the physician; for, on a thousand occasions, this anatomy, this physiology, are his guides in practice, enabling him, as I have said, to form his diagnosis, teaching the pathology, and suggesting the proper treatment.

All this will be obvious from the details given in the following brief essay. It will be still more so as I point out the condition of the larynx and of the tongue, the laryngismus and the odaxismus, in epilepsy; of the larynx in hydrophobia; and of the pharynx in tetanus: and as I trace the effects of emotion and of hysteria, of certain destructive agents, as strangulation, strychine, &c., on the same organs. The resemblance between epilepsy and strangulation I have pointed out elsewhere. Besides the condition of the veins and larynx, that of the ejaculators, expulsors, and sphincters, is similar in both these cases.

The causes.—It was impossible to conceive any just idea of the causes of epilepsy, and of their modes of action, until we possessed a just view of the excito-motor system of nerves, and their functions. There existed vague notions, indeed, relative to idiopathic and symptomatic epilepsy; but there could be no distinct and accurate views of the excited, direct, and reflex, modes of action of its various causes, and of the relations of these to pathology. The causes of the epileptic seizure may be divided into those which consist in—

1. Gastric, enteric, and uterine, and probably, urinary, irritation; this form of epilepsy is *reflex*. 2. Irritation of the membranes within the cranium, and, perhaps of some other cavities, as the pericardium; this form of epilepsy is also *reflex*. 3. Irritation of the medulla oblongata, in diseases seated within the cranium; this form of epilepsy is *direct*. 4. Shocks to the nervous system, and especially to the medulla oblongata, from great

emotion, as fright, from violent efforts, from sexual excesses, &c.; this form of epilepsy is also *direct*. 5. Sleep, in which there is, normally, a degree of sphagiasmus; and 6. Causes of augmented and undue excitability of the spinal system, as that left by previous seizures, emotion, sexual excesses, interrupted sleep, &c. 7. I ought also to allude to certain perturbations of the system, as causes of the epileptic seizures, such as is observed in the first stage of variola. 8. It is also to be observed, that exhaustion from loss of blood is a cause of epileptic convulsion, especially in the erect position. 9. Epileptic seizures, also, frequently attend albuminuria and diabetes.

[But whatever may be the exciting cause of epilepsy, the first symptom of the seizure is that of compression of the veins of the neck,—sphagiasmus as the author calls it.]

1. *Of sphagiasmus, and consequent cerebral epilepsy.* Whatever the *cause* of epilepsy may be, sphagiasmus appears to be the first obvious effect or symptom. From this symptom, which must be viewed in its double aspect of contraction of certain muscles of the neck, and of compression of the veins of the neck, all that is purely cerebral in epilepsy immediately arises; affections of the senses—the eye, the ear, the senses of smell and taste, and of the touch: affections of the intellect &c.,—thus, before the eyes there are flashes of light. flocci volitantes, or mist; in the ears there are various noises, as of a cataract, or of machinery, or of musketry; there is the smell or taste of musk or of fæces; and the sense of touch is affected by the well-known aura epileptica. In regard to the intellect, we have the "oblivium" and the "delirium breve," so beautifully described by Heberden, with various affections of the sleep, the memory, &c. All that depends on sphagiasmus, *all* that falls short of laryngismus, may be viewed, in general terms. as cerebral epilepsy; while all that is beyond this term is violent convulsion, with its further still more fearful consequences in congestion of the cerebrum, of the cerebellum, and doubtless also of the medulla oblongata.

[The cause of sphagiasmus is unknown; but Dr. Hall offers a suggestion upon the subject. He says:]

I may be allowed to *suggest*, perhaps, that as the orbicularis closes the eyelid when the influence of volition is removed from the levator palpebræ, so the platysma myoides may compress the jugulars either when volition is removed, as in sleep, or when it is itself excited to spasmodic contraction. But it is to the effect on the jugular veins, however produced which is indubitable and so important in the theory of convulsive diseases, and to which I have assigned the designation of sphagiasmus, that I beg, in the most especial manner, to draw the attention of the profession.

[The physiological action of the platysma myoides occurs. according to Dr. Hall, upon two occasions, in producing sleep, and in causing that condition of the capillary vessels of the face known as blushing, or flushing. Dr. Hall proceeds to speak—]

2. *Of laryngismus and spinal epilepsy.*—All is changed if, to sphagiasmus, the compression of the veins of the neck, and the consequent congestion of the cerebrum, and the series of cerebral affections which I have described, laryngismus, and especially extreme laryngismus, or complete closure of the larynx, with the suffocation of Aretæus, supervenes. Terrific convulsions follow: there is odaxismus—the tongue being thrust out of the mouth, and bitten more or less violently by the convulsive approximation of the teeth, or the lip or the cheek is drawn inwards and bitten by a similar muscular action; whilst every other form of convulsive affection occurs, with the appearance of tenfold congestion of the eyes, face, and neck, and doubtless of the organs contained within the cranial cavity and upper part of the spinal canal. The eyelids and face are sometimes marked by distinct ecchymoses. the effect of this violent congestion. We observe, once more, a series of convulsive affections, now of the *direct* character, attended or followed by a still greater and more dire affection of the encephalon.

The convulsions are seen in frightful distortion of the eyes, face, neck, limbs, and general frame: there are sphagiasmus and laryngismus, with the appearances of strangulation; there are foaming at the mouth, protrusion of the tongue, violent closure of the maxillæ, the foam being frequently bloody, the tongue severely wounded, the teeth gnashed together: meanwhile there may be expulsion of the urine, semen, or fæces. Sometimes the convulsion draws the eyes, head, neck, and general frame to one side, affecting the hand and foot of that side more than the other; and sometimes those limbs are left feeble and slightly contracted or paralytic, and the patient appears hemiplegic. More constantly the state of congestion of the encephalon is attended by deep and lasting coma, or followed by a paroxysm of mania; and after repeated attacks the memory and the intellect may fail.

[Tendency of blood to the head is a thing often talked about, but little understood. The following is Dr. Hall's opinion.]

The phrase, "the undue tendency of blood," is an erroneous one, originating in a false hypothesis, and leading to false conclusions. The word congestion, or impeded return, should be substituted for the term tendency; and the cause must be sought in excitants of spinal action, and in the condition of the veins of the neck, and not in the heart and arteries. It is this topical congestion, and not mere general plethora, that is the object of our study; for it may co-exist with a state of anæma of the general system. The real and immediate cause of this condition of the circulation within the head, is sphagiasmus, or obstructed state of the circulation in the jugular and other veins of the neck. The most prompt remedy, in many circumstances, is the induction of vomiting, either by an effectual dose of ipecacuan, or by irritation of the fauces—a measure of far greater value, in many points of view, than is generally supposed. In the "tendency of blood to the head," or rather, in its congestion there, the evacuation of the stomach and intestines, and bloodletting, general and topical, are the important remedies, the cause and its effects being equally treated.

[Any of the symptoms of epilepsy above described, sphagiasmus, laryngismus, odaxismus even, may be absent; and mixed cases occur in which one or other of these symptoms exist in very varying degrees. This leads us to Dr. Hall's account of the diagnosis. He says:]

When laryngismus, and especially when odaxismus occurs, there can be no doubt that the case is epileptic. The last is the most pathognomic symptom of this dire malady. The great distinction between any form of hysteria and epilepsy, consists in the *absence*, in the former, of these three symptoms—sphagiasmus, laryngismus and odaxismus—and of the consequent absence of cerebral congestion, and of real convulsion. In hysteria, there are, indeed, some forms of laryngismus, especially the stridulous, denoted by loss of voice, or strange croupy inspirations or cough, as there are struggles and various violent movements of the body and limbs: but a very little attention and experience will enable us to distingush these affections from the epileptic laryngismus and from real convulsion. It is this absence of sphagiasmus which prevents the accession of real insensibility in the hysteric attack; it is the absence of laryngismus which prevents the accession of real convulsion. In epilepsy. sphagiasmus is, as I have said, usually the very first symptom; all that follows is, therefore, however frightful to behold, unattended by suffering in the patient. Even laryngismus, so terrific to the hydrophobic patient, is unfelt in the epileptic. But cases do occur in which the patient is conscious of the impending attack—that is, sphagiasmus is either absent or exists in too mild a form to induce insensibility; there are cerebral or laryngeal symptoms which strike the patient with horror or terror. As the sphagiasmus, so the laryngismus may be imperfect; in the latter case, the attack is attended by various noises, sometimes assuming the character of shrieks, sometimes of the crowing inspiration. In like manner odaxismus is frequently absent. Epilepsy may, indeed, however formidable in its essence, assume the form of the mildest or of the most dire of human maladies. It might be interesting to trace the various classical allusions to this disease as being portentous of the anger of the gods, or of natural calamities; but such an episode would detain us too long on this occasion. It is interesting to observe, that while the series of symptoms in epilepsy is such as has been described—whilst, in hydrophobia, the patient is subjected to a fearful suffocative paroxysm of laryngismus, without sphagiasmus and its attendant insensibility—in tetanus we witness neither of these symptoms; the maxillæ are affected with trismus, and the neck is variously affected by tetanic spasms, but the jugular veins are not compressed, nor is the larynx closed: the action of the pharynx is, however, frequently involved in this disease. In chorea, and in the paralysis agitans, the jugular veins, the larynx, and the pharynx, all escape; it is, apparently the system of purely voluntary muscles which are affected; and this affection is not precisely convulsive or spasmodic; the muscles of the articulations, of the neck, the hands and arms, and eventually of the rest of the body, are agitated, the acts of volition being perverted and thwarted, as it were, by emotion and the excitomotor power; so peculiar and distinct are the several diseases of this class, when viewed by the light of physiology !' Similar as epilepsy may appear to the convulsions of children, there are some points of difference which deserve to be noticed. In the latter, whilst odaxismus is scarcely known, and incomplete laryngismus is common, the affections of the hands and feet are pathognomonic, whilst sudden dissolution, on the one hand, and recovery, on the other, are more frequent than in epilepsy.

On Sphagiasmus specially.—Even the unprofessional bystander hastens to loosen the cravat and collar of the patient seized with epilepsy, so obviously is he affected with the usual signs and appearances of strangulation. Aretæus compares the epileptic patient to the strangled bull, or to the animal round the neck of which a cord has been tightened. In both these cases, that condition of the jugular vein is induced which I have designated sphagiasmus; and it is of no little interest to observe how similar, in many respects, the two cases prove to be.

In both there are compressed veins of the neck; in both there are congestion of the cerebrum, with instant insensibility; in both there is protrusion, tumidity, and lividity of the tongue; in both there are convulsions; in both there may be erection of the penis, with expulsion of the semen. Epilepsy is strangulation, and strangulation is epilepsy; and as the nature, so the treatment of the two cases must be similar. I need not pursue this parallel further. It is obvious that the two cases throw a ray of light on each other.

[In the *treatment* of epilepsy, we must relieve all gastric, enteric, and uterine irritations, by emetics, enemata, and vaginal injections of warm water; the patient must be prevented from sleeping too deeply, and from being too suddenly disturbed. All mental and bodily excitement must be avoided. Simple and nutritious diet, regulation of the bowels and kidneys, cold sponging and friction, fresh air and exercise, are of more avail in the treatment of epilepsy, than any specific that might be named. If an attack is threatened, the patient must be narrowly watched, and cold water dashed in his face when the paroxysm seems approaching; and if the fit actually takes place, Dr. Hall says—]

The next point which demands attention is the state of sphagiasmus. The head should be raised, the neck should be exposed, forced deep inspirations should be drawn voluntarily if the patient retains his sensibility, or should be excited by dashing cold water on the face if insensibility have supervened, in order that the veins may be relieved, and the larynx opened. The rest of the treatment at this period of the seizure consists in free exposure of the face and neck to the open air, or a current of air, and the application of a cold spirit lotion to the head, and of fomentations to the feet; and if there be convulsion, in guarding the patient against accident or injury.

Lancet, Oct. 30, 1847. p. 460.

[In another paper published in the Lancet, March 18, 1848, the reader will find further remarks by this eminent physiologist on the subject of *Spasmo-paralysis.* We subjoin some of the most interesting, and refer the reader to the Lancet for further details.]

Paralysis may depend on the exclusion of the influence either of the cerebrum, or of the spinal marrow,—that is, of both cerebrum and spinal marrow. Spasm can only arise from irritation of some part of the *spinal* system; but this irritation may affect the incident excitor nerves, the spinal centre, or the muscular nerves. Spasmo-paralysis is a term which I have adopted to express the varied combinations of spasm and paralysis which occur so frequently in practice.

How interesting and how valuable would be a series of accurate cases and *post-mortem* examinations of the various congenital spasmodic and spasmo-paralytic affections! of cheirismus, and especially of podrismus, in the varied forms, or rather deformities, of club-foot.

Is the cause of this calamity always of centric origin? or is it sometimes the reflex action of external cold, injury, &c.? The class of intra-uterine diseases still requires renewed investigation and no part of it more than affections of the nervous system. Effusion over the hemispheres, and at the base of the encephalon, and along the spinal canal, is too frequently the cause of irritation—pressure or counter-pressure—on the spinal system, that division of the nervous system endowed with the excito-motor power. This irritation is the source of various congenital convulsive or spasmodic affections; it may be the cause of strabismus, laryngismus, &c., of the various distortions of the hands, and especially of the feet. In the case of two brothers, similarly affected, the tendo-Achillis was permanently contracted with spasmo-paralysis of both legs; on the death of one aged 12, effusion on the cerebral hemispheres, at the base of the brain, and along the spinal canal, was found in considerable quantity; the arachnoid was thickened, and, over the lateral portion of one hemisphere, converted into a thin layer of bone.

Of Spasmo-paralysis in Infants and Children.—Spasmo-paralysis in infants and children is of centric and of ex-centric origin—the prognosis of the former being, of course, far more formidable than that of the latter.

Teething, and gastric and intestinal irritation, and, I *suspect,* exposure of the naked surface to the cold, are the causes of the reflex or ex-centric forms of this malady. From such causes I have seen hemiphlegia of the arm, or of the leg, or of both; and the proof that the affection *was* of reflex origin was a very happy one—viz., speedy recovery. The event, however, is not always so fortunate. Sometimes both legs are affected, and this affection is sometimes more observed in one leg than in the other; sometimes the spasm, sometimes the paralysis, predominates; and sometimes one leg is affected with paralysis, while the other is affected with spasmo-paralysis.

Spasmo-paralysis in the Adult.—But of all the cases which have come under my observation, none has been more replete with interest and anxiety than spasmo-paralysis occurring in the adult period of human life. It is well known that the epileptic convulsion sometimes leaves one arm, one leg, or one side, paralytic or hemiplegic, in a greater or less degree. If the seizures were not to be repeated, I imagine this paralysis would frequently subside, being the effect of shock, and of the common cause or causes of the convulsion, and of the hemiplegia, which is therefore not permanent. But if the shock be repeated, the paralysis may be permanent, although the convulsion subsides.

In one most interesting case, a lady, aged 35, was seized with violent convulsion of the left side of the face, and of the left arm, the leg being unaffected; when the convulsion ceased, the face and arm were left extremely, if not perfectly paralytic. A degree of amendment took place;

but the convulsions returned, occupying the same seats as before, and, on ceasing, again left the face, arm, and hand, absolutely paralytic.

This lady had once had phlegmasia dolens after parturition, and this leg again became swollen. But the cause of the attack of convulsions seemed to be discovered in the condition of the intestines; for these convulsions were relieved by purgative medicines, but were excited if those medicines acted too violently. From the paralysis left by this serious attack or repetition of attacks, the patient recovered completely—an additional proof that the affection had, like many cases of epileptic seizure, arisen from some cause excentric to the encephalon or spinal marrow. And how invaluable is this fact, in reference both to our prognosis and treatment!

Indeed, I may here observe, that spasmo-paralysis is in every respect a disease of less hopeless character than pure paralysis, inasmuch as the irritation of an organ is a less severe affection than its destruction. The diagnosis or detection of the cause is the first great object of the physician, and especially the determination of the question—Whether that cause be seated centrically or ex-centrically.

In one case, which occurred in a member of our own profession, after repeated threatenings supposed to be apoplectic, severe spasmo-paralysis supervened and remained permanent. Bleeding had been resorted to constantly as *the* preventive. It ought, I believe, to have been decided, but not too severe, antacid aperients, with a strict attention to the diet, which should not have been of a mere vegetable, but of a light and digestible character. There was, I believe, more of the epileptic than of the apoplectic in those threatenings. Is there any physical lesion? Is the case, or was the case, one admitting of recovery? How deeply interesting are all these questions!

It is plain that the new topic—new because now viewed distinctly—of spasmo-paralysis, will assume an important position amongst the objects of the physician's studies.

I have two patients under my care, at this time, with podrismus, occurring at the ages, in one, of twenty-five, in the other, of forty-five. Both are females. In the first, the right foot is drawn upwards and inwards, and so severely as to induce great tenderness and swelling of the outer ankle. Various symptoms of nervous origin are conjoined with this deformity of the foot. In the other, the tendo-Achillis in each leg is tense, and the toe only, and not the foot, much less the heel, can be put to the ground. In this case almost every article of food or medicine is rejected by vomiting. I do not believe that either of these cases is hysteria. There is no other symptom of hysteric character, and the temperament in both patients is staid and sedate.

Conclusion.—From the recent progress of the physiology of the nervous system, we are now enabled to conclude—

1. That *paralysis*, pure paralysis, *may* be an affection either of the cerebrum, the spinal marrow, or the nerves; but 2. That *spasm must* be an affection of some part of the true spinal system; and 3. That spasmo-paralysis must at least involve in it an affection of the true spinal system, either primarily or secondarily. There is only one exception to this last rule: it is the case of severe hemiplegia, in which, from the mere facts of the severing of the influence of volition, and the normal or physiological action of the spinal marrow—the source at once of the irritability of muscular fibre and of tone—the affected hand frequently becomes spasmodically flexed.

Here I conclude this brief paper. I think I have clearly shown in it, once more, how important, how essential, physiology is to the physician, and pointed out a distinction to be carefully drawn between paralysis, and spasm, and spasmo-paralysis, as at once a guide to our prognosis and our treatment.

Lancet, March 18, 1848, p. 297.

2.—ON THE IRRITABILITY OF PARALYSED MUSCLES.—By Dr. MARSHALL HALL, F.R.S., &c.

[The conclusions arrived at upon this subject by Dr. M. Hall and Dr. Todd, being opposed to each other, Dr. Hall endeavors to show in the present paper, read before the Medico-Chirurgical Society, that the discrepancy was owing to the use of different apparatus in the experiments.]

Dr. Hall chose the Cruickshank battery or trough, which produces a simple current of low intensity—this is really a test of the irritability of the muscular fibre. Dr. Todd employed the electro-dynamic, or electro-magnetic apparatus, which produces currents of great intensity, rapidly interrupted, repeated, and even alternated: this displays the power of the muscular mass. The effects of instruments so different could not be the same; and the results of experiments prove that they are diametrically opposite. In a case of hemiplegia of three years and a quarter's duration, Dr. Hall, with Mr H. Smith, first applied the current from Cruickshank's battery: on using a small number of plates, the muscles of the paralysed arm were slightly affected, those of the sound arm not at all. On augmenting the number of plates both arms were moved, but the paralytic arm more than the other. On substituting Hearder's electro-dynamic apparatus for Cruickshank's battery, both arms were moved, but the sound arm more than the paralysed arm, and this difference became still more obvious as the power of the apparatus was increased. After defining the terms used in his paper, and making some remarks on the different causes of the spasm, which is in some cases combined with paralysis, Dr. Hall proposes the following questions, affirmative answers to which would, in fact, embody the conclusions arrived at in his paper:—

1. Are those cases of paralysis in which the irritability of the muscular fibre is greater in the paralysed than in the unaffected part or limb? 2. Are there cases of paralysis in which the reverse of this obtains? 3. What are these cases severally and respectively? Are the former cases in which the influence of the cerebrum alone is severed? And are the latter cases in which the influence of the spinal marrow is intercepted? 4. Is the galvanic battery or trough, cautiously employed, a fair test of the irritability of the muscular fibre in paralytic limbs, and, consequently, diagnostic of the two cases of paralysis? In the prosecution of these questions many precautions are requisite. 1. The effect of surprise and of sudden sensation in wincing, starting, &c., must be distinguished from that of the galvanic influence. 2. The degree of the galvanic force should never be such as to give pain. 3. The first effect of the paralytic seizure is one of shock, probably of diminished irritability of the muscular fibre. Time must be allowed for the restoration and augmentation of this property. 4. The recovery from the shock, evinced by rapid increase of voluntary power during the first few days, must be distinguished from the slower recovery from the actual disease. 5. In some cases there is no recovery. In these cases it is probable there may be no augmentation, perhaps no restoration of the irritability. After these preliminary remarks, the author proceeds to the detail of a series of new experiments and observations made since the publication of Dr. Todd's paper. Case 1 was one of paralysis of the right side of the face, supposed to be paralysis of the facial nerve. The application of Cruickshank's battery caused movements only in the affected side of the face. Further inquiry into the history of the case showed that this was really a case of cerebral paralysis, and not of mere paralysis of facial nerve, as had been believed, and the galvanic test corrected the diagnosis. Case 2 was one of paralysis of the left side of the face, really depending on affection of the facial nerve. On applying galvanism, the muscles of the unparalysed side were alone excited, or most excited to contraction, according to the number of plates employed. In Case 3, one of hemiplegia, the right or paralytic hand and arm were distinctly moved by a number of plates which did not affect the

left, and much more than the left by a number of plates which affected both. The effects were the same when the direction of the current was reversed. In Case 4, also of the hemiplegia from cerebral disease, by the influence of Cruickshank's trough with fifteen plates, the left or affected hand was slightly moved, when no movement was observed in the right. With twenty or twenty-five plates movements were produced in both, but far more in the left than in the right. When Hearder's electro-dynamic apparatus was tried, the effects were reversed, being more strongly marked in the sound than in the paralysed limb. Case 5, like case 1, displayed the galvanic influence as a corrector of a hasty and an erroneous diagnosis. It was a case of paralysis of the left leg, and was supposed to be an instance of spinal paralysis. It was expected, therefore, that the muscles of the paralytic limb would be least affected by galvanism. On the contrary, they were alone, or most moved. But with Hearder's apparatus the muscles of the unaffected limb were moved, or permanently contracted, when scarcely a movement was observed in the unhealthy limb. The author observes, that no more glaring example can be given than this:—first, of muscles of paralytic limbs with augmented irritability of fibre; second, of the diagnostic power of the galvanic trough; third, of the wide difference between the effects of this apparatus and of the electro-dynamic machine. The author concludes by a few remarks on some suggestions as to other possible modes of explaining the phenomena which have been detailed. It had been supposed that the sound limbs are restrained from moving by the volition of the patient; but the author observes that in the face such an influence of volition would be evinced by distortion of the features, which is not the case; and that volition may be suspended by causing the patient to let his hands hang down loosely. It had also been suggested that the movement of the hemiplegic muscles might be the result of a reflex action. But the author points out that the movements excited by galvanism may be limited to a single muscle—do not affect groups of muscles, and are totally different in character from reflex movements; and he relates the following experiment as negativing the idea of reflex action being concerned in the phenomena. In a decapitated frog, the nerves of one leg were divided, or as far as possible removed. The two legs were then subjected to the same galvanic influence. In one there might, but in the other three there could not be a reflex action; yet, the irritability being alike, both were moved equally.

[Dr. BALY did not think that Dr. Hall had proved that the muscular irritability was increased in these cases: he thought that the reflex actions were more readily induced on account of the parts being withdrawn from the restraining influences of the mind. Dr. TODD also thought Dr. Hall's experiments inconclusive. He offered the following explanation of the phenomena they presented:]

We often meet with cases of hemplegia, in which the paralytic leg evinces vigorous and energetic reflex actions to slight stimuli—such as the most gentle application of a feather along the sole of the foot, causing a slight titillation of the surface; but if a more violent stimulus be applied—such as a strong pinch of the skin—no actions, or very slight ones will be produced. It is possible, then, that in these cases of Dr. Marshall Hall's a reflex action may be produced in the paralytic limb by the slight stimulus, which, as Dr. Baly ingeniously suggests, is prevented from taking place in the sound limb by the controlling energy of the will. This is the only explanation which occurs to me at present of cases of this description where the stimulus is so slight.

I doubt much that the feeble galvanic current used by Dr. Hall can penetrate to the muscles through the skin, which we know is a very bad conductor. It probably goes no farther than the cutaneous nerves, which it stimulates, and through which it provokes reflex actions. This idea receives some confirmation from the fact that the direction of the current occasioned no material difference in the force of the contractions. Now, in some experiments which I have lately tried, and the results of which I hope at some future day to lay before the Society, I have found that when the current is sufficiently strong to penetrate to the nerves and muscles, the direction of the current exercises a decided influence upon the amount of contractions, the direct current, or that which passes from centre to circumference, causing the greatest amount of contraction. This is in accordance with the results of Matteucci's experiments, which are no doubt well known to the Fellows of the Society; and I may add, that it affords the most important confirmation to the views I have put forward in the paper published in the last volume of the Society's *Transactions*—namely, that the galvanic current acts primarily upon the nerves of the limbs, and only secondarily, through the excitation of the nervous force in the nerves, upon the muscles. If the current acted primarily upon the muscles, it would be indifferent whether the current passed in one direction or in the other.

[Dr. Hall in reply stated that he still maintained his opinions. He said that,]

The irritability of the muscular fibre in paralytic limbs is augmented in cerebral, and diminished in spinal paralysis; that volition is the exhauster, the spinal marrow the source and restorer, of that irritability; that to test the irritability proves a diagnosis of great importance in many obscure cases; and that Cruickshank's trough, but *not* the electro-dynamic or the magneto-electric apparatus, *is* a TEST of that irritability, *is*, therefore, a diagnostic between cerebral and spinal paralysis.

[Dr. GOLDING BIRD thought that the difference in the results of Dr. Hall and Dr. Todd's experiments was due to a difference in the *tension* of the electricity employed. He said,]

The fact was, that the two physiologists used the same agent in two forms so totally distinct in their action on the molecular arrangement of bodies, that it might almost be said that two different agents had been employed. Dr. M. Hall used electricity of feeble, Dr. Todd electricity of high tension. The former employed continuous currents passing in one direction; the latter, interrupted currents, alternating in direction. Hence the experiments were in nowise comparable. Both gentlemen were undoubtedly correct in their statements, and there was not the slightest reason for attributing misinterpretation of the observed phenomena to either. Every one was familiar with the influence of tension in modifying the effects of electricity, especially in relation to its molecular action; and there is little difficulty, by calling to mind a few well recognized facts, in understanding how materially this circumstance will modify the results of physiological researches. If some gunpowder were placed on the ballot-box on the table, and the charge of an electric jar passed through it, we should observe the vivid flash and loud snap; but the gunpowder, combustible as it is, would not be influenced. It would be simply scattered over the table —for the electric discharge would rush through it too rapidly to allow time for its combustion. But let the experiment be repeated, with the simple difference of lessening the tension of the electricity, by allowing it to pass through a few feet of wet string, then the vivid flash and report will be exchanged for a feeble light and a hissing noise, but the powder will burst into flame. Again, the discharge of electricity of high tension through an heliacal coil of wire induces a far feebler amount of magnetism in an included bar of iron than is excited by the passage through the same coil of a much weaker current, of low tension. The influence of very feeble currents on molecules of matter was not so contemptible as had been stated to-night. Dr. Golding Bird firmly believed that such currents alone were competent to give information regarding the effects of electricity on matter; it must not be forgotten, that currents of high tension would traverse a fluid conductor as an electrolyte, without, so far as is known, affecting it, at least to any important extent; whilst a feeble current appeared only capable of traversing it by making its way from atom to atom, really polarizing its molecular arrangement, as has been lately beautifully shown in the researches of that illustrious philosopher, Dr. Faraday. To apply the results of this reasoning to the *quæstio vexata* before the Society, there could be but little doubt, on the minds of any thinking persons, that a current of high tension would rush through the limb of a patient as through any other conductor, scarcely influencing its minute structure, whilst one of feeble electricity would make its way from molecule to molecule of muscle or nerve, developing, in the most evident manner, any influence it is capable of producing. In all researches of this kind, the electricity should never be sufficient to excite anything approaching to pain in the sound limb, for this would vitiate all results. Dr. Todd's objection to feeble currents, on the plea of their not penetrating the skin, is evidently not tenable for a moment, for if too weak to pass through the thickness of the skin, they could hardly traverse along its surface the whole length of a limb, as assumed by him. It is, besides, notorious that a current from a single pair of plates will readily pass through a solid mass of wet plaster of Paris, as shown in the experiments of Becquerel, as well as in some recorded by Dr. Golding Bird in the pages of the *Transactions* of the Royal Society. In conclusion, Dr. Golding Bird observed that, as he had the misfortune to differ from Dr. M. Hall, respecting the value of the researches detailed by him to the Royal Society, and to which allusion had this evening been made, he felt bound, from a sense of justice to the indefatigable author of the paper, to declare his conviction that, so far as his own observations had extended, they completely corroborated the views of Dr. M. Hall. He believed that, whenever the influence of the brain was removed, a palsied limb would always evince greater susceptibility to a feeble electric current, than the unaffected one. *Medical Gazette, April 7, 1848, p. 599.*

[Connected with this interesting subject we may append a few remarks by Dr. THOMAS WILLIAMS, of Swansea, who has varied the experiments of Dr. M. Hall and confirms his views. He says:]

I have repeated the experiments, with invariable success, by which Dr. M. Hall has lately proved the power of the nerves to assume an electrogenic condition. I refrain here from giving an account of the little galvanic instrument so ingeniously contrived by Dr. Hall, by means of which it is possible to develop an inconceivably minute amount of galvanic power. It consists simply, as Dr. Hall in another place has explained, of a small strip of zinc, having soldered to one end a silver wire, which is brought back upon the zinc in the form of the letter U. The nerve of the galvanoscopic frog of Matteucci, if thrown across the arms of the machine, will excite muscular contractions if the current from the positive electrode traverse the nerve centrifugally; whilst no muscular action occurs if the zinc pole be placed distally, and the galvanic force directed therefore centripetally along the nerve.

From the conditions of this experiment, it is obvious that the galvanic current itself does not pass beyond the silver electrode on which the nerve is lying; it is returned along the silver wire towards the positive source, the nerve serving merely the function of a string to connect the active and passive poles of the apparatus. But although, as Dr. Hall has so acutely proved, the galvanic current departs from the nerve at the point where it reposes in contact with the silver electrode, the nerve, notwithstanding, throughout its whole course, as far as the extremities of the toes, and therefore *beyond* the part on which *direct* influence of the galvanic excitant is exerted, assumes a new functional state, and the muscles of the leg are thrown into persistent contraction. This excited state of the nerve Dr. Hall has called the electro-genic; that produced by strychnia, being similar, he has called the strychno-genic. Electricians would describe it as an *induced*, or secondary condition. The suggestions arising from the *principle* of these beautiful demonstrations of Dr. Hall led me to perform several experiments, which I afterwards found had already been tried by Matteucci. I exposed the two sacral nerves of the frog, and connected them, whilst the animal was still living, by the galvanoscopic frog, without inducing in the muscles of the latter the least appearance of contraction. From the analogy suggested by the electro-genic facts established by Dr. Hall, it seemed to me a probable supposition, that although the muscles of the animal body may not be excited to contraction by an electric or some allied current, conducted by the nervous ramusculi by which they are actually traversed, it might yet result that some functional excitation of these remote muscular branches ocurred, after the manner of the electro-genic or excited condition, sufficiently energetic to determine the contraction of the muscles.

[Dr. Williams gives a diagram showing the origins of the anterior and posterior spinal nerves, and the circle which they make when assisted by the ganglion on the posterior nerve. He then says:]

In this experiment the galvanoscopic frog is made to connect the anterior and posterior roots of the spinal nerves while yet within the theca vertebralis, before, therefore, they converge in the ganglion. When the experiment is skilfully executed, distinct contractions take place in the galvanoscopic frog. It will be seen that this experiment is different in principle from that in which two compound cerebro-spinal nerves—i. e., the two sciatics—are connected by means of the galvanoscopic frog. In the latter case, if there be dynamic forces in the nerves at all approaching in character to the galvanic, they cannot impress the test nerve; for in each sciatic nerve thus electrically connected, there must reside two influences acting in diametrical opposition, and tending, therefore, to neutralize each other. The galvanoscopic frog *could* not manifest the least movement. During the repetition of Dr Hall and Matteucci's experiments, the sources of fallacy and difficulty arising from the compound character of the spinal nerves presented themselves to my mind more and more palpably. The question irresistibly arose—How are these opposed, yet contiguous currents, to be examined singly and separately? The answer was immediate. At the roots of the spinal nerves. The experiment is surrounded by great difficulties. The animal must retain its circulation and spinal excitability, or the nervous currents cannot be excited. The roots of the nerves are placed at an inaccessible depth, and surrounded by bone. The animal should be etherized and the required conditions are fulfilled. I have succeeded in the rabbit and the dog. I have tried without success, at the slaughter house, on the ox and the calf immediately after death. This experiment seems to me to involve the true theory of the ganglions on the posterior roots of the spinal nerves. They subserve simply the purpose of electrically uniting the two roots, in order that the current emitted along the *motor* root may *immediately* return back to the centre along the *sentient* root. The motor root thus carries the *direct* current, and the sentient the *reverse*, the motor root coinciding, therefore, with the positive electrode, and the sentient the negative, the ganglion constituting only a medium of galvanic union, the other uniting the two poles. From this explanation it is manifest that the direct current travels along the conducting motor root only to the distance of about an inch and a half from the centre, at which point it departs from the course of the *direct* conductor, enters the ganglion and returns by the sentient root.

Thus, all that tract of the motor nerve lying to the periphery of the ganglion, or between the ganglion and the extremities of the nerves in the muscles, cannot ever be the subject of any immediate influence from the current affecting the root. The condition of the nerve, whatever be its molecular nature, must therefore be an *induced* or *secondary* state, which immediately precedes, and occasions the contraction of the muscles. The affection of the nerve is the result of the intense current operating on the root, or the extreme of the line. Let this explanation be reversed, it will become equally applicable to the sentient nerve; the *reverse* current proceeding from the ganglion, back towards the centre, exciting in the root such an intense polaric condition as to affect the whole extent of the nerve, the ganglion to the skin, with that *induced* change required for the fulfilment of its function. It is impossible at present to conceive the nature of the relation, if any exist, between the muscular electric currents of Matteucci and the force affecting the nerves. *Lancet, Nov.* 13, 1847, *p.* 516.

16.—ON THE SIGNS DERIVABLE FROM PARALYSIS.—By Professor Andral.

[Speaking of alterations of motion as signs of affection of the nervous system, M. Andral says—]

From the seat of modified motility we may sometimes detect the seat of the disease in the nervous centres; for instance, alteration of motion in both limbs of one side points, in the first place, to disease of the cerebrum, and in the second, to disease of the side of the brain corresponding to that side of the body in which motion has not been altered. This observation not only applies to the cerebrum, but also to the cerebellum, but does not hold good for the pons varolii. It might, it is true, be said that in some forms of meningitis, fluid pressing more upon one side of the brain than upon the other—in tumours occupying the membranes, or in meningeal hemorrhage—the same crossed effects of paralysis will be observed; but these cases are extremely rare: they constitute exceptions, and do not annul the diagnostic rule above established. It has been asserted that pressure of hemispheres downwards was more prone to occasion paralysis than lateral pressure, and hence that the seat of meningeal hemorrhage or effusion might occasionally be surmised; but the fact itself should not be admitted until further demonstration. In reading attentively the authors who have treated of these subjects, from Valsalva and Morgagni, down to our own contemporaries, perhaps twenty cases might be collected in which paralysis was found to exist on the same side as the anatomical change within the brain. Of these twenty cases, the greater number are not sufficiently detailed to be conclusive; but some five or six must be accepted. Morgagni relates one, in which he took every precaution to avoid error. In the "Archives" of July, 1846, M. Bouillon Lagrange published another, accompanied by every detail, and which seems perfectly authenticated. M. Blandin observed one case of the same description, in which the disease occupied the posterior lobules of the brain, and he explained the presence of paralysis on the same side by the anatomical fact mentioned by Gall, viz., that the fibres which run from the medulla oblongata to the posterior cerebral lobules do not decussate. This remark accounts, it is true, for cases like that of Professor Blandin, but leaves unexplained those in which the alteration occupied the anterior parts of the hemispheres. One limb only may be paralyzed from cerebral disease, and the signification of this modification of motion is the same as when the two limbs of one side are affected. It has been often asserted that, when the arm was paralyzed, disease of the optic thalami might be inferred, and alterations of the corpus striatum when the motion of the leg was modified. Some facts have been adduced in support of this theory, but a greater number militate against it. When the spinal cord is diseased, alteration of motion in the limbs shows itself in a different manner, both limbs, inferior or superior, being usually affected at or about the same time. In spinal affections the paralysis does not in general take place suddenly: when the four limbs are successively or simultaneously deprived of motion, we are compelled to admit the presence of anatomical change in both hemispheres, in the pons varolii or in the spinal cord. Alteration of the movements of the face indicates disease of the brain, or pressure upon the portio dura; when due to cerebral disorder, it takes place on the same side as paralysis of the limbs. But when the leg and arm of one side are deprived of motion, and when the face is paralyzed on the opposite side, a double cause to these symptoms must be admitted to exist. Alteration of movement in the tongue is caused by disease of the brain; also in the eye; squinting, for instance, is often one of the symptoms of meningitis. Paralysis of the rectum and bladder is more frequent in maladies of the spine than in those of the brain, and usually follows loss of motion in the inferior extremities. It is also, in most cases, disease of the spine which occasions paralysis of the œsophagian, pharyngeal, or respiratory muscles. In apoplexy, however, pulmonary congestion and stertorous breathing are frequently observed. The muscular parietes of the abdomen are not uncommonly struck in diseases of the spine, and at their incipient stage, by semi-paralysis or spasmodic contraction.

We now turn to the study of the alterations of motion, considered as to their nature. Mobility may be diminished or abolished, and it may be perverted: hence two great divisions, which we will successively examine. When motion is diminished, incomplete paralysis is said to exist; the paralysis is complete when movements are altogether abolished—two conditions which may indicate disease of the nervous centres, of the nerves themselves, or of muscular structures.

In the first place, paralysis may be present without any appreciable anatomical alteration of the nervous centres: when lesions are detected, their nature is often pointed out by the mode of production of the paralysis. Thus when loss of motion has taken place suddenly, and at once attains its highest degree, hemorrhage has most probably occurred in some portion of the nervous centres: if the hemorrhage or apoplexy be slight, the paralysis is not complete; the contrary occurs if the local damage is considerable. When paralysis increases, even very rapidly, after the first instant of its production, its cause is not to be sought for in hemorrhage, but in encephalitis, followed by rapid ramollissement. Another sign distinguishes the paralysis due to softening, from that produced by hemorrhage: it is contraction in the paralyzed parts—a symptom which may precede the loss of motion in ramollissement, but is never observed immediately after an apoplectic stroke; when it occurs in cerebral hemorrhage, it is only several days after the seizure, where local reaction takes place within the brain. Paralysis which comes on in very slow and gradual stages is due to chronic softening of the cerebrum, and may also be occasioned by the presence of tumours or morbid productions within the skull, pressure being thus produced on the cerebrum. In these various cases, paralysis is partial. But diminution of mobility has, in one instance, a tendency to become general: observation teaches us that this general paralysis, which begins by difficulty of the movements of the tongue, chiefly observable in the articulation of words, which soon produces inability to raise the feet from the ground, afterwards impedes the motion of the arms, and finally attacks the rectum and bladder, is usually preceded or followed by loss of memory, and more or less derangement of the mental powers; it is very often met with in the insane, and was for a long time considered as belonging exclusively to the history of insanity; but more rigorous researches have clearly shown that it may be quite independent of any alteration of the mind. Authors do not agree upon the nature of the anatomical lesion by which it is caused, and, from the results of our own experience, we are inclined to refer it in general to alteration of the cerebral envelopes, principally to serous suffusion beneath the arachnoid, within the ventricles, and at the basis of the brain. The cortical substance, and even sometimes the medullary texture of the cerebrum, may also be indurated or softened. We believe that, when the cortical substance has been in the first place affected, the symptoms begin by disturbance of the intellect; and that, when the meninges and the basis of the brain have been the primary seat of disease, its first signs are alterations of motility: but we cannot do better than refer you for further information to M. Calmeil's excellent work on the subject. In some cases of introduction of toxic substances into the system no alteration whatever is found on dissection, and yet paralysis has been present: for instance, persons who have suffered much from saturnine intoxication are subject to delirium and epileptic convulsions, which cannot permit us to doubt that the brain has undergone some modification. These subjects often become paralyzed, the extensor muscles of the hands and fingers losing their power of contraction, great pain sometimes existing at the same time in the affected extremities. Again, in hysteria, local paralysis, most fickle in its characters and duration, shews itself frequently. And, as a third instance, we may mention *pellagra*, a disease recently described, which begins by an eruption on the skin, and leads to paraplegia. In this disease, attributed by Dr. Rousselle to the use of bad Indian corn, no alteration in the spinal cord has ever yet been detected, nor has any been discovered in the brain of paralyzed subjects who had suffered from hysteria or from saturnine intoxication.

Some forms of paralysis are certainly due to local alterations of the nerves. Thus paralysis of the deltoid muscle is frequently the result of pressure upon the circumflex nerve; and paralysis of the face often results from disease of the portio dura. In this latter malady, which sometimes may be produced by a draught of cold air upon one side of the face, the aspect of the countenance is particularly striking: the wrinkles of the forehead on the affected side are effaced; the eye remains open, and the conjunctiva becomes inflamed in all cases, from uninterrupted contact with the air; the mouth is dragged towards the healthy side: the tongue is not deviated. When paralysis of the face is due to cerebral disease, and not to an affection of the nerves, the limbs are usually paralyzed also; the tongue is deviated, and we cannot assign a reason for the fact, but the eyelids retain their power of motion. Paralysis may, as we have stated, be the result of a disease of the muscles. This is observed sometimes after rheumatic pains of very great duration, or when a muscle has been kept for a long time in a state of complete immobility; the muscular tissue becomes atrophied, and may for ever lose the power of contracting.—*Med. Times, Feb.* 26, 1848, *p.* 256.

17.—IDIOPATHIC TETANUS TREATED BY CHLOROFORM.—By W. H. CARY, Esq., Woodford, Essex.

[The patient was a little girl, nine years old, who complained one cold day of cramp in her fingers, and complete emprosthotonos shortly supervened. She was treated by purgatives and large doses of opium and ether for several days, but the only thing which seemed to afford relief, and this only partial, was the warm bath.]

On the 25th, the sixth day, perceiving that exhaustion was ensuing, and that loss of power in deglutition and articulation occasionally happened, and the diaphragm was rigidly and painfully contracting, I determined to use chloroform; and, accompanied by my medical friend and neighbour, Mr. Jarvis, we employed forty minims, before which she was entreating the bystanders to fall on her, and keep her down. In two minutes she was narcotised, and remained in that state fully seventeen minutes. The spasms slightly returned. At a quarter to one the same quantity of chloroform was repeated (though not constantly, so as to exercise its powers) for half an hour, which produced a sleep that continued two hours. At eight in the evening my presence occasioned some, though slight, involuntary action, which was silenced by the same dose. She slept well, and arose in the morning, at nine o'clock, quite well, in which state she has been ever since, except having slight twitchings on two occasions, when I have since visited her.— *Lancet, Feb.* 19, 1848, *p.* 209.

18.—ON INTOXICATION.—By G. Corfe, Esq., Middlesex Hospital.

[Mr. Corfe has lately given us a series of very practical articles on different subjects, many of which we shall place before our readers in due course. The first we give is "on Intoxication," to distinguish which, from cerebral diseases, is sometimes puzzling. Mr. Corfe says—]

A patient is brought into the hospital, perhaps on a policeman's stretcher, or he is carried in by friends, who state that he was picked up in the streets, senseless. His pupils are dilated, immoveable; his breathing is deep, and low, and heavy, the expiration being short and abrupt, whilst the inspiration is a prolonged deep sigh, with more or less stertor; pulse is full and strong. The suspicion arises that the man has sanguineous effusion into one or both ventricles of the brain. But it must be again acknowledged that, of all the perplexing, deceitful, and varying symptoms which diseases occasionally put on, those of cerebral lesions or mere cerebral disturbance are, of all others, the most difficult to decide upon. We have admitted cases into the hospital in the dead of the night, brought here by policemen, who have found the patient lying senseless, or he has been seen to fall senseless on the pavement: we have bled, blistered, leeched, and purged; shaved the head, and given turpentine enemas, but all to no purpose; insensibility has remained; when, to our surprise, in twelve hours afterwards we have gone to visit our patient, we have found him perfectly sensible and tolerably well, not more surprised at the loss of a head of hair than we have been at the sudden revival of our supposed case of apoplexy. Whilst on the other hand, I have admitted a case as one of "dead drunk," perfectly inanimate, and have, for the sake of precaution, sent him into the ward to bed, and yet have found it to prove an instance of apoplexy. I have, however, learned a valuable lesson by even these difficulties: for in every instance of late years, when a case of complete insensibility is admitted, I have requested the house-surgeon to empty, and then wash out, the stomach by means of the pump; and, if it has been from drunkenness, the "sot" has shown his character up before we have finished this operation; and if it has been one of apoplexy, it has done no harm, and it has proved that it was more than intoxication, as no alcoholic fetor has been detected in the contents of the stomach.

In all cases of intoxication the mental faculties become roused before the operation of thoroughly washing out the stomach by the pump is concluded; whilst, on the other hand, it may be said, the reverse is ordinarily the case in cerebral lesions, or in mere concussions of the brain. Before we allow the tube to be withdrawn from the stomach, in cases of inebriety, we usually inject three ounces of the dilute acetate of ammonia draught, which has an extraordinary effect—sometimes in "sobering" the head, and calming the stomach too.

I am aware that it is much easier to recommend the employment of the stomach-pump than to administer it to persons who are sometimes in the highest state of excitement bordering on maniacal fury. I am anxious, therefore, to describe the mode in which we employ this remedial agent in such cases, for until I arrived at this practical method, we were often obliged to abandon the use of the pump, in consequence of the difficulties which the struggles and powerful action of the patient's body produced; and I may here remark that, on one occasion, the gag was forced from the mouth, and the man bit the tube in twain a few inches from the cylinder, leaving the remainder nearly two feet in length, in his œsophagus and stomach, when, by the greatest manual force, I wrenched open his jaws and plunged my fingers down his throat, and was fortunate enough to seize the divided end at the point of finger and thumb just as it had slipped within the bag of pharynx. Since that period I adopted the following method:—The patient is seated in a strong wooden chair, another chair is placed behind him, and an attendant is ordered to sit in it, and taking the arms of the patient, he pinions them by holding the wrists firmly against the back of the chair. This method serves to fasten the trunk securely in the chair; the legs are then swung in a round towel, which is passed round the ankles by a noose, and, a second chair being placed, so that the back of it shall be towards the legs of the patient, another attendant is placed in it; he carries the towel over the back of the chair, and sits upon it, and thus the legs are at right angles with the trunk, and consequently they are almost powerless. If, however, the man offers to flex the knees, the ankles are instantly raised higher, and the power of the flexors of the thigh is thereby overcome in an instant. By this position, it will be observed, that the patient is deprived of all muscular power, and the only fixed point on which his body rests is the ischiatic tubera. I am satisfied that the stomach-tube may not only be introduced with comparative ease, but that the operation of the pump is perfectly harmless, when judiciously administered, upon a refractory patient thus immoveably fixed. *Medical Times, Oct.* 23, 1847, *p.* 17.

19.—ON DELIRIUM TREMENS.—By G. Corfe, Esq., Middlesex Hospital.

This is a disorder peculiar to drunkards; it usually creeps on when they are deprived of their accustomed stimulus; but I have repeatedly noticed that men who are in the habit of drinking freely, and who at the same time eat largely of animal food, twice or even three times a day, rarely become the subjects of this disease; but if they fall off in their appetite for this kind of food, and still continue to take their usual quantity of beverage, bilious diarrhœa, perhaps, supervenes; they become disordered, dose themselves with salts, &c., and perhaps get bled, and the disease soon sets in with its usual fierceness of excitement. Such is the case with the brewers' draymen, and porters, potmen, &c., in London, amongst which class of persons the far greatest number of these cases occur. Such is the fact, at least, with the idiopathic form of this disease; but the traumatic variety occurs in the surgical wards continually, and even here, it may be observed, that if a drayman is brought in with a fractured thigh, and is able to continue to eat his accustomed quantity of animal food, with a fair allowance of porter, &c., he is most likely to escape the disease altogether. There is, at this moment that I write, a man in the accident ward, from one of the largest breweries, with severe laceration of the leg, and who has been allowed by Mr. Arnott, his surgeon, five pints daily of the very best porter, and which is certainly equivalent to a gallon of the publican's liquor in point of strength, and he has also been allowed full meat diet, extra bread, &c., and has hitherto escaped all symptoms of the disease.

These men, generally speaking, are rationed at a gallon per diem when in full work, and they usually drink at least another half gallon in their rounds delivering the beer to the different public-houses, where they are entitled, as they think, though it is only a custom in the trade, to have a pint of porter each, and some bread and cheese. They are not, however, habitual spirit-drinkers, and, considering the work that they do, and the temptations that lie in their way, they are as abstemious, in comparison, in dram-drinking as they are excessive in porter-drinking.

In the east part of London, and along the Thames, this disease is more frequently seen amongst the coalwhippers and bargemen, who drink even more than the draymen of the west-end; but, as they obtain their liquor wholly from the public-house, which is of an inferior quality, and not from the firm direct, as is the case with the latter class of men, it may be calculated that they swallow the same amount of alcohol in both instances.

It should be observed that every case of threatening delirium tremens is preceded by more or less biliary derangement; and, as these men rarely enjoy active or healthy secretions from their alimentary canal, it does appear, from the observation of a large number of cases in this hospital, that the disease is purely hepatic in its origin. This opinion is entertained by our talented physician, Dr. Seth Thompson, who has most successfully treated some of the worst cases of this disorder with large and repeated doses of calomel, followed by brisk cathartics; and he has never been obliged to resort to opium at all, sleep having succeeded the active unloading of the hepatic system. It has long since struck my mind that the invasion of the disease springs from a sudden or, it may be, a gradual poisoning of the blood, by means of a chemical alteration in the bile and urine; and that some of the elements of one or both of these secretions are carried through the circulation. My chief reasons for drawing these conclusions are the following:—Since I have had the opportunity of watching the admirable practice of the above-named physician, the disease has given way, in a most decided manner, under sharp purgation with calomel, &c.; and the improvement is invariably coexistent with the passage of numerous dark, offensive, and deeply-bilious evacuations. The onset of the disease is ushered in with loss of appetite, foul tongue, giddiness, nausea; and, in an effort to throw off some of the morbid cystic bile, sickness and bilious diarrhœa may probably set in also. Again, a very large number of cases, and those of the worst form, present themselves with symptoms of poisoning by urea. It is stated that they have had one or more fits; these fits are distinctly epileptic, and exactly resemble those attacks which sometimes occur in persons labouring under albuminous disease of the kidney, and in whom the disappearance of urea from the urine, and its presence in the circulating fluids, has been repeatedly detected by Dr. Christison and others. In fatal cases of delirium tremens, an epileptic fit is often the forerunner of death.

[Mr. Corfe speaks highly of the use of cold affusion in cases where there is very violent excitement. He says—]

Robert Pyper, Esq., surgeon to the 11th Hussars, and my late intelligent colleague in this hospital, informs me that whenever the men have been indulging too freely in liquor, and that the well-marked symptoms of approaching delirium tremens manifest themselves he orders the hospital servant and another man to mount a table or ladder, place the patient in a tub below them, and pour, from this height, a continuous stream of cold water upon the head and chest of the offender until he calmed down; he is then rubbed dry with a rough towel, placed in a bed between warm blankets, and almost invariably falls into a deep sleep of many hours duration, and awakes perfectly collected and well. We were induced to adopt this practice many years ago, in consequence of our utter inability to confine a strong, muscular fellow, whose fearful excitement, pugnacity, and rebellious obstinacy to take any medicine or food, set all our attempts to control him, or to induce sleep, at utter defiance. The house surgeon and myself placed a chair on each side of his bed-head with a pail of cold water upon each chair. A man sat on each side of his body, and held his head and chest down, so as to prevent him rising up in bed.

Two more persons supplied us, respectively, from the pails, with pints of cold water, and we alternately poured it in a small stream upon his forehead, face, and chest; the more he bellowed, the more fluid he gulped; he struggled for breath, and, again recovering his respiratory powers, hallooed and roared, "Murder! police! murder! police!" but so much the more did he get of cold water down his throat. We saw it was a desperate case, and called for a desperate remedy, if such it may be styled. We persevered, and so did he; but at length he choked, he gulped: the respiratory system became paralyzed, so to speak, or, at least, tranquillized; he whined, spoke mildly about our cruel treatment, inquired how long we were going on with that sort of work, promised to be quiet if we would leave off, and at length sued for pity, and entreated us to give over, as he had had enough. We instantly desisted, drew away the wet clothes, rubbed him dry, had some hot blankets ready at hand, covered him up, and he fell asleep, and continued in a sound doze for thirteen hours, and awoke perfectly well, but unconscious of all that had passed, only that he had dreamt he had been out in a pelting storm!

It is needful, however, to advert once more to the fact, that a large proportion of the cases of this disease which have been admitted into the medical wards during the last two or three years, have been most successfully treated by full doses of calomel and aperients, whilst opium, as a narcotic, has been almost wholly abandoned; and whenever the former drug has acted briskly upon the hepatic circulation and has brought away, for several days successively, a large amount of chocolate-colored, offensive bile, the hallucinations have disappeared, tranquil and refreshing rest has followed, and convalescence has rapidly succeeded. But, although the authority of so eminent a physician as Dr. Watson is directly contrary to this practice, yet it is impossible to have witnessed the gratifying results of the purgative treatment without being fully convinced that this course of practice is both safer, and is based upon pathological principles more prudent, than is the treatment of drugging a semi-maniac, who is already poisoned by morbid secretions, with another narcotic. the action of which tends directly to check the separation of those morbid agents from the system, which generate the disease. *Med. Times, Nov.* 27, 1847, *p.* 113.

[MR. SOLLY points out very clearly, in a few words, the difference in the two forms of delirium tremens—the one arising from intoxication, he very properly calls *delirium ebriosorum.*]

Delirium Tremens and Delirium Ebriosorum.—It is impossible, Mr. Solly observes, to give in words all that distinguishes these two diseases; they must be seen frequently to be appreciated. But the following will assist in their diagnosis:—The head and skin generally is cool and moist in delirium tremens; dry and hot in delirium ebriosorum. The pupil varies in both according to the stage; in the early stage of both it is generally contracted, in the latter stage dilated. The conjunctiva injected and red in delirium ebriosorum; the reverse in delirium tremens. The mental derangement in the former is more allied to an exalted, excited state of intellect; in the latter it approaches fatuity and depression. The tongue is generally pale and furred in delirium tremens, sometimes unnaturally clean and red; in delirium ebriosorum it is usually dry, and sometimes brown; but this is no certain guide. The pulse is most uncertain, for, as all inflammatory affections of the brain are depressing in their effects on the heart's action, so do we find that the pulse is not hard and wiry in the hyperemic affection, which, however, never amounts to one acutely inflammatory. Still, on the whole, there is less power in the beat of the artery, and that more varied in delirium tremens than in delirium ebriosorum.

Medical Times, Jan. 1, 1848, *p.* 214.

[This disease may be produced by other cerebral excitants besides intoxicating liquids: the following case was caused by tobacco. It is related by Dr. Gordon.]

The patient, aged seventy-one, had been smoking tobacco to great excess for a number of years. At length, a short time before I saw him, he resolved to abandon the use of it altogether. The day on which he formed this resolution he smoked, in quick succession, nine cigars, which was followed by considerable nausea and giddiness for three days. These symptoms then passed off, and his health for a short time seemed better than usual; but after this brief interval he fell into a lethargic state from which he was with difficulty aroused. This condition was succeeded by the symptoms of a true delirium tremens. He was wakeful, agitated, talkative, and alarmed at imaginary objects around his bed. His pulse was about 85 a minute, full, but soft; countenance dejected, with a wild, confused look; skin cold and moist; bowels constipated; tongue moist and slightly coated.

I am not able to report the termination of this singular case, as I left the neighborhood soon after I saw the patient; but as having a physiological interest, I will mention two phenomena which were reported to me in connexion with it.

1st. The patient, previous to this attack, had been hard of hearing.

While laboring under it his hearing became excellent. 2d. He had also labored under some difficulty of speech for a number of years, owing to what seemed a partial paralysis of the tongue. When the derangement of his cerebral system came on, he recovered the use of his tongue and was able to speak distinctly and rapidly.—*American (Western) Journal of Medicine and Surgery.*
Lancet, Jan. 29, 1848, p. 127.

[Delirium tremens has repeatedly been treated successfully by ether and chloroform, when all other treatment has failed. Such a powerful remedy must, however, in such cases, be used very carefully, when the brain is unduly over-excited. Dr. Anderson relates a very severe case which had resisted for several days the influence of opiates, purgatives, blister to the nape, ice to the head, &c. After relating the failure of these means, Dr. Anderson says:]

Such being the condition of things, it was decided to administer the ether, which was done by means of a hollow sponge, supplied from the outside, and covering the whole face. At first he resisted; but although there was an impossibility of making him swallow medicines, there was no resisting inhalation.

After four minutes' application he became perfectly passive, and commenced drawing long and deep inspirations, with stertor and tracheal râle; pupils still contracted, and balls turned upwards. The sponge was then removed during five minutes, etherization continuing during that time, when it gradually passed off, the breathing becoming more natural, and a return of restlessness and delirium took place. The sponge was re-applied, and after four or five minutes, the effects again became manifest, and continued for from eight to ten minutes; and when they passed off, he remained much more calm, although not intelligent nor seemingly inclined to sleep. Another application was made with the same results; he no longer resisted the inhalation, but inspired with eagerness when the sponge was applied, and after recovering from the stupor, did not refuse his drinks. He dozed occasionally for four hours, took one pil. morph. gr. ss., which had been left with the attendants to be given him if he did not sleep, and fell asleep directly after, and did not awake for six hours, when he was found to be perfectly rational, saying that he felt himself quite well. The case, when the ether was resorted to, was certainly a most unpromising one; but whether the induction of sleep must be attributed to this agent, or the narcotics previously taken, or the pil. morphiæ taken afterwards, may admit of doubt; but that the patient was quieted, and, from being violent, resisting and furious, was rendered quiescent, passive, and obedient, there can be no question.—*New York Annalist, and Brit. Amer. Jour.*
Dublin Med. Press, Jan. 12, 1848, p. 25.

[Another case, of a similar kind, is related in the *Boston Medical and Surgical Journal.*]

The usual treatment having failed, and large and repeated doses of morphia proving utterly powerless to produce sleep, the patient was found on [illegible]day morning still in a state of wakefulness and high delirium, but so much exhausted as to make it a matter of the highest moment to induce sleep immediately. In this condition it was thought expedient, as a last resort, to make trial of ethereal inhalation, and the ether was accordingly administered by the sponge.

The patient was very refractory, and required to be held by assistants, in the meanwhile struggling, raving, and cursing. After inhaling the vapor for the space of ten or twelve minutes, he appeared quiet, and was thought to be fully under the etherial influence; but upon the removal of the sponge he sprang up and commenced raving anew. The process was renewed, and continued for ten minutes more, at the end of which time the patient was brought fairly under the desired influence, and fell asleep. From this state of *artificial sleep* he passed, *without waking*, into a quiet, deep, and untroubled slumber, which continued, *without intermission*, for four hours and a half. He was seen several times during the continuance of this sleep, and within a very few minutes after he awoke. He then appeared perfectly rational, called for cold water, and asked to have his leg dressed (he had bruised it badly during the delirium). In the course of half an hour he fell again (as was anticipated) into a quiet sleep, which continued, with few intermissions, during the afternoon and night. This morning (Saturday) he appears perfectly rational and well, though weak. Has no recollection of anything that had happened, from nightfall on Monday, to the time of his first waking on Friday afternoon.

Lancet. Jan. 8, 1848, *p.* 47.

[Mr. WARWICK, of Southwell, was sent for on the 14th of January, to see a woman forty-five years old, who was suffering from an aggravated attack of delirium tremens. A blister was applied to the neck, and half a grain of morphia given every two hours. In the evening she was no better; a turpentine injection was given, and a grain of morphia with one-sixth of a grain of emetic tartar in camphor mixture, every two hours during the night.]

Jan. 5th.—Eight A.M.: Has not had any sleep during the night; still very violent; appeared sick; bowels again relieved. Omit calomel and tartar emetic. Twelve o'clock: Making violent efforts to get out of bed. To have three grains of opium. Half-past one, P.M.: Rather worse than better. At this time chloroform was administered, by placing a cloth sprinkled with it over her face. In ten minutes she was sleeping soundly. She awoke in a quarter of an hour, but was quickly sent to sleep again by the chloroform, and under its influence the pulse fell to 80. It was administered, at intervals of a quarter of an hour, for two hours. At this time, fifty drops of laudanum were given, and the chloroform was again applied for the last time. She now said, "I am drunk; you are giving me naphtha;" but she immediately became composed, and slept soundly for three hours. Dr. Hutchinson, of Nottingham, now arrived. On our entering the room, the patient awoke, and on being asked how she felt, she said "I am very well; what has been the matter, that Dr. Hutchinson is come to see me?" and answered reasonably all the questions proposed to her. Ten P.M.: Perfectly rational; has had some sleep; sucked a mutton chop, and had some brandy-and-water; pulse 80; pupils natural. To have forty drops of laudanum.

6th.—Had a very comfortable night; complains of thirst; has not any recollection of the circumstances of her illness, excepting her remark on the last application of the chloroform. I am not prepared to attribute the recovery of my patient entirely to chloroform; it is, however, certain that the means used for the relief of her sufferings did not appear to be productive of any benefit previously to its employment.

Lancet, January 15, 1848, *p.* 70.

[Mr. HOOPER, of New Peckham, gives us another case, as follows:—The patient was a man 47 years of age, who had frequently before been attacked with delirium tremens. After two hours sleep from an opiate he was more tranquil, but in the evening again became delirious, and almost incontrollable. A drachm of chloroform having been exhibited by inhalation, Mr. Hooper says that—]

From being very noisy and unmanageable, in two minutes he dropped off into a quiet sleep, which continued for twenty minutes, when he awoke calm and rational. I regret very much that a further trial was not made, as I found he had had another attack towards morning, which I have no doubt would have yielded to the application of chloroform a second time.

Lancet, April 1, 1848, *p.* 361.

[The following case is by Mr. WORTHINGTON:—A lad, aged 17, received a bad compound fracture of the leg, and on the eleventh day afterwards, tetanic symptoms manifested themselves. A large dose of calomel, followed by turpentine and castor oil, and subsequently full doses of opium were given, and a blister applied to the spine: but the symptoms became more severe, and the next morning it was determined to try chloroform. Though its use did not prevent the fatal issue of the case, it will be seen that considerable relief was derived from it. The following is Mr. Worthington's account of the case:—]

The spasms had become more severe, and were repeated every few minutes. Trismus was now complete, together with opisthotonos to a painful degree, and the countenance presented a frightful tetanic grin, expressive of much agony. During the paroxysms the pulse rose to 160, respiration was performed in a forcible and convulsive manner, and the face was of a deep purple hue. Death from asphyxia seemed inevitable. The patient being completely lock-jawed, we were precluded administering further remedies by the mouth: it was therefore proposed to make trial of the chloroform.

A piece of sponge, containing two drachms, being introduced into the chamber of Coxeter's inhaler, an anæsthetic influence was speedily produced, and maintained, more or less, for a period of two hours and a half. The effect was striking; the muscles became so completely relaxed, that the head could with facility be bent forward, and the spine straightened. The masseter muscles lost their rigidity, so that by depressing the symphysis of the chin, the mouth could be opened to any extent. Respiration was performed with greater freedom; the pulse fell to 140; the countenance became less livid. An attempt was made to swallow one or two pieces of orange, and on questioning him how he felt, he replied, better.

The use of the chloroform was suspended for three quarters of an hour, when the spasms returned, and after two or three paroxysms, resumed their wonted activity. Inhalation was again had recourse to, and was followed by a mitigation of symptoms. It was persevêred in at intervals until nearly five o'clock in the afternoon, when a frightful spasm took place, and the poor sufferer died asphyxiated, thirty-three hours from the commencement of the attack, and twelve days after the accident.

Provincial Medical and Surgical Journal, April 19, 1848, *p.* 204.

20.—ON THE USE OF TARTAR EMETIC IN CHOREA AND IN CEREBRAL EXCITEMENT.—By G. Corfe, Esq., Middlesex Hospital.

Mr. Corfe relates the case of a woman, æt. twenty-eight, with severe chorea, who was under the care of Dr. Seth Thompson. He says:—]

The violence of the symptoms rapidly subsided under the steady and repeated exhibition of tartar emetic, in large doses. The Doctor commenced with half a grain every hour, for eight or ten successive doses, and then he continued it, in the same quantity, every four, and subsequently every six hours, when she obtained tranquil and refreshing sleep, and gradually improved under this treatment alone, and left the hospital perfectly well.

I may just observe, that I have since had occasion to admire the same successful line of practice adopted by this gentleman in other cases of *cerebral excitement*, amounting almost to mania. One case, especially, is before my mind's eye: it was that of a gentleman's servant, who was brought here in a state of the greatest excitement. There had been various moral causes to produce this disorder, but when he arrived here we found him most unmanageable, so that we were compelled to use severe but firm language, and he was thus persuaded to keep in bed without any restraint from straps, strait waistcoat, &c., &c. He now commenced the tartar emetic, in the same doses as the female patient, and at the same intervals, when the stomach became nauseated after five grains had been taken, and he obtained eight or nine hours of tranquil sleep, and awoke quite rational and calm, and his convalescence went on favorably from that time. He was ordered a purgative also of calomel and colocynth, which tended to relieve his head. He has since returned to his master's employment, and continues to be quite healthy, with the exception of occasional attacks of bilious headache.

Med. Times, Jan. 1, 1848, *p.* 212.

21.—NEURALGIA TREATED BY CHLOROFORM.—By F. Sibson, Esq., Nottingham.

[In Retrospect, Part XV., p. 62, Mr. Sibson gives us some interesting cases of this description. He has since published other cases treated by chloroform. One case was that of a stout young butcher: the disease, which was of an intermittent character, had lasted twelve days.]

After he had inhaled the chloroform, much diluted with air, during nine or ten inspirations, he signified, by holding up his hand, that the pain had ceased. The inhalation was discontinued. He then raised his head, previously resting in the arms of an assistant, and became immediately, and for a few seconds, almost unconscious. He felt low and weak for about an hour after, and was sleepy until the evening. The pain did not return. ℞. Pil. hyd., ext. hyosc., aa. gr. v. st. sum. Ol. ric., ol. tereb., aa. ℥ss. capt. nocte maneque. Ext. bellad. gr. ss.; quin. disulph. gr. vj.

Feb. 18th.—He has been free from pain or uneasiness of any kind, save a slight return yesterday morning. He now feels quite well. This case illustrates well the favourable action of chloroform. The relief was immediate, and the pain did not return. The immediate relief was undoubtedly due to the chloroform: the permanent relief to the treatment subsequently adopted, and to the natural progress of the case. I have often seen neuralgia removed by the use of the extract of belladonna.* Chloroform and belladonna, in their therapeutic influence on neuralgia, have a similar action; they neither of them remove the cause of the neuralgia: they both of them remove the pain, by obliterating sensation. Patients under operation, recovering from the action of chloroform, often become conscious while still insensible to pain.

[Another case is that of a woman, who had been subject to neuralgic pains in the forehead and temple for several years.]

She inhaled chloroform, much diluted with air, for seventeen seconds, when she became sleepy, but not insensible, and perfectly free from pain. Capt. st. ol. ric., ol. tereb. aa. ℥ss. ℞. Ext. ballad. gr. one-third; quinæ disulph. gr. iv. n. maneque.

Feb. 27.—She has had no return of neuralgia. In all cases where the neuralgia is due to, or attended by, cerebral affection, chloroform and belladonna are contraindicated.

In my paper in the Gazette of February 18th, I traced the progressive action of chloroform, ether, and alcohol, on the brain, and classified thus their increasing effects:—Cerebral excitement; cerebral disturbance: cerebral sleep, sopor, the pupils contracted: cerebral death, coma, the pupils dilated.

At p. 433 of the Medical Gazette for March 10, Dr. Miller, of Louisville, relates an interesting case, where phrenitis with delirium, resulting in death, was caused by the repeated inhalation of ether at an evening party. It may be laid down as a fixed principle, that ether and chloroform are contraindicated in persons labouring under cerebral disease; as both these agents act injuriously on the brain.

In those cases where the neuralgia is caused by disease in the nerve itself, or by the pressure of diseased bone or other diseased tissue—in those cases, indeed, in which, from their very nature, the affection must be unyielding to any treatment, chloroform can only afford very temporary relief indeed—probably only during the time of unconsciousness; in such cases, belladonna or aconite may possibly be of service. The inhalation of chloroform is especially indicated in those cases of neuralgia that are due to the reflex morbid sensation excited by disordered stomach and bowels, exposure of the skin to cold, and other like causes.

Medical Gazette, March 31, 1848, *p.* 535.

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* See a paper by Dr. Hutchinson on belladonna in neuralgia, in the Lancet for 1843-4.

22.—NEURALGIA TREATED BY THE ACTUAL CAUTERY.

M. Notta adduces thirteen cases in illustration of the value of this form of counter-irritation. Of these two were instances of intercostal neuralgia, ten of sciatica, one of facial neuralgia. Half the patients were robust, the remainder debilitated and impoverished. All were well-marked instances of neuralgia—that is to say, they were points painful on pressure, and darting pains along the course of the nerves; these pains were severe, and sleep was more or less disturbed in all the patients. Of the patients laboring under sciatica, six were quite unable to walk, and four only had received any benefit from previous treatment. In all these cases the cauterization was conducted as follows:—The patient being placed in a favourable position, was rendered insensible by etherization, and the affected part was crossed two, three, or more times, with a thin iron, heated to whiteness. after which it was covered by compresses, dipped in cold water. The cautery produced brownish lines, which the day after became dry and crisp, and eventually desquamated. The subsequent pain was inconsiderable.

In respect of the effects of the cauterization, it may be stated that the most remarkable was the notable relief of the neuralgic pain. In five or six hours the limb could be moved with facility, and the following night was tranqcil; in the course of twenty-four or forty-eight hours the darting pains disappeared. Of the thirteen patients, in whom it was tried, ten were perfectly cured, two were much relieved, and in one only was there no improvement.—*Union Medicale, Oct.*, 1847.

Prov. Med. and Surg. Jour. Jan. 26, 1848, *p.* 54.

23.—CASE OF INTERCOSTAL NEURALGIA CURED BY ELECTRO-MAGNETISM.—By Dr. W. H. Ranking, Norwich.

[The patient was subject to attacks of excruciating pain referred to each side of the thorax at the union of the ninth ribs with their cartilages,—judged to be neuralgic from its periodic character, its exactly symmetrical locality, the absence of fever, &c. Quinine, iron, colchicum, arsenic, were tried in turn without success; ether was inhaled during the paroxysm, but the pain returned with returning consciousness; morphia was the only thing which procured him relief, and this, of course, only temporary. Dr. Ranking says:]

Under these circumstances I determined to give little or no medicine, merely bismuth and rhubarb, and to have recourse to electro-magnetism. This agent was operated with every day during twenty minutes, and a few days only had elapsed when decided benefit was declared. The intervals between the paroxysms were prolonged, and the pain gradually became so tolerable, that the patient was able to dispense with his morphine. In the course of a month it had entirely left him, and to this time (nearly eight months,) he has not had the slightest return.

The instrument employed was that recommended by Dr. Golding Bird. The current was passed through the arms first, for the space of twenty minutes, the patient holding a conductor in each hand. It was subsequently made to traverse the intercostal nerves, by placing one conductor over the spine, and the other alternately over the painful spots. The tension was preserved as high as it could be borne.

Prov. Med. and Surg. Jour., April 19, 1848, *p.* 206.

24.—REMEDY FOR TOOTHACHE.—By Dr. Bushnan.

A new remedy for toothache, more efficacious than creasote, and hitherto always successful in the cases where I have seen it employed. This is carvacrol ($C^{26}H^{18}O^{2} = HOC^{26}H^{17}O$). Carvacrol, according to Professor Schweitzer, is formed by the action of potassa, iodine, or hydrated phosphoric acid, upon oleum carui, ol. thymi; and according to Claus, by the action of iodine upon camphor. Schweitzer has shown that the product from camphor is the same as that obtained from the oil of caraway.

Preparation.—I. Ol. carui is to be distilled with hydrated phosphoric acid. The liquid that passes over is to be poured back into the retort until it no longer retains the smell of the oil of caraway. The carvacrol separates itself in the form of an oil from the phosphoric acid.

II. In the same way a saturated solution of iodine must be distilled with oil of caraway until no more hydriodic acid is formed. The red mass which remains in the retort must be operated upon by potash. The yellow solution is to be distilled. Carvene (C^{10} H^{8}) passes over, and the carvacrol remains. It is to be purified by redistillation.

III. Equal parts of camphor and iodine are to be rubbed together and distilled until no red vapor is given off. The black mass remaining in the retort contains carbon, resin, camphine, colophene, iodine, and carvacrol; that in the receiver, camphine, colophene, carvacrol, and a little iodine and hydriodic acid, which, on standing, separates into two layers. The upper layer is to be distilled, and at 180° camphine passes over, while colophene and carvacrol remain. This is to be acted on by potash. The carvacrol may be obtained from the alkaline solution by the action of an acid and by distillation over purified lime.—(Claus.)

Carvacrol is an oily liquid, very similar to creasote, with a very unpleasant smell and strong taste. Applied on a piece of cotton to a decayed and painful tooth, it gives immediate relief. I hope Mr. Hooper will prepare this successful and hitherto unpublished remedy, and enable the profession to judge of its value. *Med. Times, Jan.* 8, 1848, *p.* 236.

[The following has also been used with success :—]

A mixture of two parts of the liquid ammonia of commerce with one of some simple tincture is recommended as a remedy for toothache, so often uncontrollable. A piece of lint is dipped into this mixture, and then introduced into the carious tooth, when the nerve is immediately cauterized, and pain stopped. It is stated to be eminently successful, and in some cases is supposed to act by neutralizing an acid product in the decaying tooth.

Lancet, Mar. 25, 1848, *p.* 351.

25.—OBSERVATIONS ON HYSTERIA.—By G. Corfe, Esq., Middlesex Hospital.

[Referring to cases in which females have become outrageously excited by taking a small quantity of liquor upon a healthy stomach, Mr. Corfe says:]

Now, all attempts to pacify such persons by ordinary means, as by argument, by medicine, or by reasoning, are fruitless; they are like eels for wriggling, and like bulls for fierceness and strength; our only alternative is to fix them on the stretcher, and strap them there, mount a chair placed on each side of the head, and keep up a constant stream of cold water on the face; and the more they scream, the more cold water they are obliged to gulp down their throat, until the globus is conquered, the head cooled, the passions subdued, and, when they really find that we give them more in proportion to the screaming, they become calm, and sue for pity in some such language as, "O pray, sir, let me up;" Don't pray, give me any more;" "I am very well now;" "I'll make no more noise," &c., &c.

It must be always borne in mind that the pitiable subjects of epilepsy present another train of symptoms from those I have cursorily described, and yet there is such an apparent assimilation in the two paroxysms, that even a practised eye cannot, at all times, decide which disease the patient is labouring under. However, I shall briefly relate the main features of the two diseases. The hysterical patient throws the trunk and limbs about with strong convulsive movements, wriggles from side to side; there is no distortion of the features, there is no foaming at the mouth, no fixedness of the eye, but it rolls about, and the lids nictate, sometimes in the most rapid manner; the pupils obey the stimulus of light, the skin is hot, the pulse is quick; there is no loss of consciousness, but grinding of the teeth occasionally, though the tongue is never bitten.

The epileptic patient lies more tranquilly, though there are convulsive throes, yet they are regular in their action, and confined chiefly to one side of the body; she is not unmanageable, a nurse can usually control her movements. The face is more or less distorted, livid, and foam issues from the mouth with or without blood; the expression of the countenance is always altered in a paroxysm of epilepsy, but rarely so in hysteria; indeed, the distortions are as frightful in the one as the features are placid in the other; the cornea is bright and glistening in the former, whilst it is dull, or lifeless, or expressionless in the pitiable epileptic. I never was deceived yet by the state of the iris before a strong hand-lamp in these two diseases. In hysteria it will contract readily, again dilate and again contract so long as the light remains before the cornea; the eyeball will roll and oscillate under this stimulus.

But the eye of the poor epileptic will evince none of these movements under a strong light. Often and often have I suddenly darted the strong glare of a lamp at a "fit case," brought in by the police on a stretcher, and though there were no symptoms of consciousness before, she has heaved a deep sigh, opened her eyes, turned away her head, and evidently showed herself up to be in an hysterical paroxysm. A few smart showers of cold water, from a quart jug, have soon brought her to her senses. Senses! should I say? No; brought her to unmask and exhibit some of her real characters. I am willing to admit, with the most eminent authorities of the present day, that many of these hysterical paroxysms only occur in those females where the uterine functions are more or less disturbed, and the general health impaired; and that, to a certain extent, they have not a control over these fits, when they approach, so as to shake them off. But by far the largest number of females who are either brought here, or who are seized in the wards of the hospital, present no such history. Their passions of jealousy, envy, rage, malice, or disappointment have been roused, they have "worked themselves" up into a rage, and at length have gone off into "a fit." Now, the history of many such patients does not enable you to lay down the proximate cause of this attack to any functional disturbance. When calm, they will inform you that they were in excellent health; that they were annoyed, excited, or chagrined at some occurrence or other, perhaps a mere trifle, and they have "boiled up" at it; and thus reason has lost her sway, the reins have been let loose upon the neck of the evil passions of the heart, and women are thus ungovernable and no longer able to attend to parental advice or submit to any control.

There is also an epidemic character about hysteria: a whole ward has been infected by it upon the admission of one strongly marked case: globus has arisen in this one; pleurodynia in another; syncope in a third; nervous crying, sobbing, barking, hiccoughing, and laughing in another; a fractious and determined opposition to all discipline in the ward, or an obstinate refusal to take medicine, or be on amicable terms with the nurses and other patients, has sprung up in many more, so that there is a complete mutiny amongst the whole, some criminating others, and recrimination following in return. In the midst of this worry, vexation, and, to my mind, most annoying state of things, we are suddenly called to a case in the ward of "a girl in a fit." The paroxysm is well marked, and, without any ceremony, we commence a thorough sousing of cold water; the patient soon rallies out of it: the whole ward is in consternation at the boldness and "cruelty" of the treatment, but to a certainty, almost, we hear of no more hysteria, or hysterical symptoms, for months afterwards. Nay, I have transferred quarrelsome, irritable, and hysterical patients from a disturbed ward to one that was quite orderly and free from the malady, and the infection has run through the room, until some severe measures were adopted to "nip it in the bud." Can any argument be stronger than this, that there is very much more under the control of the will than some writers upon this subject are willing to admit?

A striking instance occurred some time ago in proof of this assertion. My valued friend, James Clayton, Esq., requested me to accompany him in one of his usual visits to a female charity-school, to which he is surgeon, in the suburbs of London, in order, as he observed, that I might witness a very curious pathological scene. I was not made acquainted fully with the singular phenomena that were to be presented to my notice; indeed, it would have baffled description: for we were shortly ushered into the sick dormitory, when no great stretch of the imagination would have led a person to suppose, who had been introduced into the room blindfolded, that he was in a menagerie of gallinacea; there was, in short, the squall of the peacock, the quack of the duck, the crow of the cock, and the cackling of the turkey sent forth by a group of eighteen or twenty girls between the ages of twelve and sixteen. It was most ludicrous, and the "uproar in the building now became alarming to the neighbourhood, and from the loudness of the sounds it was difficult to separate the patients effectively;" and yet the above-named gentleman had attempted various means to eradicate this imitative epidemic from the school, but it had been hitherto ineffectual; and one of the main objects of my visit was to inform them all, before me, that I had made arrangements at the hospital to receive them there, where they would be roughly handled with shower-baths, &c., &c., unless the complaint left the house.* This information had its desired effect; the thoughts of going into an hospital, before they were really *ill*, drove away this mimicry and worrying noise, and I have not heard that it has ever returned.

Some pathologists would probably consider the above epidemic more entitled to the name of chorea than of hysteria, but we must place it, I apprehend, where the zoophytes are placed in natural history, that is, between the two kingdoms, as it partakes of the character of both of these diseases in some respects. *Med. Times, Dec. 25, p. 194.*

26.—TREATMENT OF CHOREA BY EMETIC TARTAR.—By M. Salgues.

In a case of chorea of five years and a half standing, and which had resisted valerian, oxide of zinc, purgatives, cold baths, and narcotic frictions on the spine, M. Salgues of Dijon had recourse to tartar emetic. Each day, for a week, the child took thirty centigrammes in a drink. The first dose produced strong vomiting and an abundant diarrhœa. The others caused no apparent effect, with the exception of anorexia, and the cessation of the chorea. The fourth day, ten leeches were applied to the neck to diminish a slight cerebral congestion. A permanent cure followed.—*Rev. Med. de Dijon, and Annales de Therapeutique*, October, 1847.

Monthly Journal, Dec., 1847, *p.* 439.

27.—ON THE TREATMENT OF ACUTE MANIA.—By M. Briere de Boismont.

M. Briere de Boismont, who had already brought before the Academy of Medicine the treatment of mania by prolonged baths, now laid before the Institute a paper on the same subject, being the *resume* of twenty-five cases.

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* These curious cases are drawn up in detail by Mr. Oscar Clayton, and will be found in the twenty-sixth volume of "The Medico-Chirurgical Transactions," 2843.

He insisted with much reason upon the value of a method which, in the short space of a few hours, relieved the brain from the frightful influence of acute mania, and represented the advantage of employing a plan of treatment of a simple and not debilitating nature. He concluded his communication by asserting that the acute forms of insanity might be cured in the space of one or two weeks, by the exhibition of baths prolonged during five, ten, twelve, and fifteen hours, and accompanied by continuous cool irrigations upon the forehead. Acute mania was the form which was most speedily cured; secondly, acute delirium, delirium ebriosorum, puerperal mania, and acute monomania. In several of these forms, however, the cure was neither as rapid nor as constant as in the first. Acute atoxic mania, and chronic mania, were improved, but not in any case completely cured. M. Briere de Boismont was further of opinion that his method would be found useful in hysteria, and in other nervous maladies attended with excitement. *Medical Times, Feb. 26, 1848, p. 360.*

28.—CASE OF LOSS OF SPEECH CURED BY GALVANO-PUNCTURE.—By M. CAMINO.

In 1813, a married woman, Rosa Ponti, then aged forty-seven, was affected with a loss of sensation and movement, in consequence of a great fright. Recovering by little and little, she regained the use of her legs, but did not recover that of her arms and head, which remained paralysed from that time. From that moment she could not articulate a single word; she stammered sometimes, but without being able to pronounce even a monosyllable. The tongue, which remained immoveable between the teeth, appeared also to be atrophied.

On the 21st of May, 1836, a metallic needle was introduced into the neck, directing its point towards the occipital branch of the first cervical nerve; then it was brought into connection with the zinc pole of a voltaic pile; and holding the tongue, elevated and stretched out on a sheet of the same metal, the circle was closed by presenting to that organ the knob of a brass director. The patient showed, by quickly drawing herself away, that she had felt the shock. The experiment was repeated, and the effect was more marked than before. She gained immediately the power of lifting her tongue. At the end of three other shocks the patient exclaimed—"Oh, Dieu!" and could answer some questions in an intelligent manner, although with some difficulty. She also became able to move her tongue from side to side.

The next day, after some shocks given in the same manner, M. Camino commenced to vary the points of contact, and to give the electricity different directions. The patient showed more and more sensibility, and the faculty of articulation followed the gradual return of the movements of the tongue. Two days of repose employed in exercising the organ sensibly rendered the faculty of pronouncing and articulating sounds easier and more accurate. In a short time she was able to speak as before, and acquitted herself so well, and with so much ardour, that she seemed, says the author, to wish to make up as quickly as possible for the time lost in inaction and silence. Every three or four days she came back to receive four or five shocks with the pile, not being able, as she says, to bear more. On the 10th of June, she complained, without obvious cause, of pain in the head and a general feeling of weight, an ailment which was dissipated by a bleeding. After some more sittings, not only was her speech recovered, but also the activity of the other paralysed parts, which became quite fit to exercise their functions.—*Gaz. Med. de Paris.*

Dublin Medical Press, March 1, 1848, p. 133.

ORGANS OF CIRCULATION.

29.—ON THE PHYSICAL EXAMINATION OF THE BLOOD.—By Dr. COPLAND, F.R.S., &c.

"It is of great importance to the physician to observe closely the *physical appearances* or sensible characters of the blood, when removed from the subject of disease, both immediately upon and some time after its removal. It is hardly possible for him to devote his attention to the analysis or *chemical constitution* of this fluid, inasmuch as this requires considerable time and diversified experiments to arrive at satisfactory conclusions; and, besides, many of the changes observed are truly vital, or at least the results of departing vitality, and are either very imperfectly, or not at all, indicated by chemical analysis or tests, although frequently manifested by distinct physical characters.

Various changes as respects the *colour* of the blood, both at the time of removing it from the vein and afterwards, have been observed. The blood may present every shade of colour, from a pinkish hue, or a pale or florid red, to a deep red, or a brownish or dark red, or dark violet, or even to a brownish or black, or dark greenish hue. The first of these colours is observed chiefly in cases of anæmia; the latter of them in congestive diseases; and the last chiefly in pestilential or malignant maladies, or in cases of poisoning,—indicating not only a contaminated state of the blood, but also impaired organic nervous influence of the vessels and vital organs.

But it is not merely the colour of the blood, but also the rapidity and mode of its *coagulation*, and the *state of the coagulum*, that require attention from the physician. The relative proportions of coagulum and serum; the firmness, or the flaccidity or softness of the former; the presence of cupping of the coagulum, or of the buffy coat, and the thickness and density of the buff, are circumstances which will be duly estimated by him, as indications of organic nervous energy or excitement—of states of vascular action and of vital resistance. He will, from these conditions of the blood, infer existing states of the whole vascular system, and of the organic nervous system as actuating the vascular,—viewing these conditions as the results of the states of these systems; and whilst he estimates them all at their true value, he will not attribute undue importance to any one condition apart from the rest. He will not, as in a case to which I was recently called, after taking away between thirty and forty ounces of blood, again take away nearly as much within a few hours, merely because the latter cupfuls of the former bleeding were cupped and buffed, and thus nearly destroy the patient; but experience will soon show him, if his education have not taught him, that, in inflammatory affections of serous or fibrous tissues, and in diseases attended by vascular excitement, without loss of vital power or resistance or infectious contamination of the blood, the fibrin continuing abundant, the coagulum may present these appearances to the last, and even although it may be relatively small to the amount of serum.

But, in different states of the organic nervous influence or vital power, and owing to these states either primarily or consecutively, the blood presents very opposite physical characters. It coagulates more rapidly and more imperfectly, or even hardly coagulates at all, or at least does not separate into a coagulum distinct from the serum. These characters are usually observed in depressed states of vital power and resistance, and in contaminated or poisoned conditions of the blood, and are owing either to absorption of contaminating and morbid matters, or to interrupted depuration by the several emunctories. In some malignant diseases characterised by extreme depression of vital energy, with a rapid state of the circulation, the change in the appearances of the blood has been most remarkable and rapid in its accession. In the worst form of puerperal fever—a disease which I have seen go on to a fatal issue within twenty-four hours from its accession, and for which blood-letting was often most improperly and fatally employed, because it had been recommended by some dangerous, because ignorant, writers—the blood has, in some instances to which I was called subsequently to its abstraction, presented the appearance of a straw-coloured and very thin jelly, without any coagulum, the colouring matter being precipitated to the bottom of the vessel of a black hue, and in the manner of a powder which had been mechanically mixed in the fluid which had suspended it, and without the least cohesion between its particles. In these cases, as well as in some other maladies characterised by extreme depression of vital power, and a poisoned state of the blood, the coagulation is not only imperfect, but is of a peculiar kind; the colouring matter being detached from the other constituents of the blood almost as soon as the blood passes from the vein. The small amount of vitality possessed by the blood in these cases, is lost immediately upon its abstraction from the body; and the fibrin, although it may exist in tolerable quantity, is incapable of contracting or adhering so as to form a coagulum.

Medical Gazette, Oct. 29, 1847, p. 757.

30.—ON THE INFLUENCE OF OBSTRUCTED CIRCULATION THROUGH THE HEART.—By Dr. Copland, F.R.S., &c.

This is one of the most important sources of complicated disease. I have before pointed out the intimate connection that exists between the circulation through the heart and that through the lungs; but so much have we been in the habit, in consequence of the modes of teaching and writing generally adopted, of viewing disease nosologically, and of regarding one species as being altogether distinct from another, and so injuriously has this acted in the practice of medicine, that we have thereby been actually prevented from seeing the connection between different diseases, and how intimately they are associated and how readily the disorder of one organ induces or passes into that of another, until experience and repeated observation have destroyed the injurious impressions of erroneous education and false precepts.

We have all been accustomed to observe a short hurried state of respiration on the least exertion; and this has often been considered as a form of asthma, and the disease has been often looked for in the lungs themselves, or the respiratory passages. The patient has been said to have spasm of the bronchi or the trachea, or some disorder of the respiratory passages, which has produced this disordered respiration. But now that we have traced more intimately the relation of the disorder of one organ to another, we have found that in these cases the lungs may be free from disease, further than congestion arising from interruption to the circulation through the heart; and we have discovered that, in the majority of such cases, the lungs are only secondarily affected, and that the heart is primarily in fault. This condition of the respiration is most frequently owing to this cause, even where there is but slight disease in the heart. Thus in weakened, nervous, and susceptible persons, the affection of either organ soon extends to the other. If the lungs are disordered, the heart becomes affected; or if the heart is primarily affected, the lungs become disordered—the least excitement of one organ extends to the other. In many persons of lax fibre, or of a lymphatic or leuco-phlegmatic constitution, the parietes of the heart are deficient in tone, and slight dilatation in these cases often takes place, so as to give rise to imperfect circulation and congestion, with or without effusion in the vicinity of the congested viscera; *the subordinate circulating apparatuses, or the subordinate orders of the vascular system, namely the vascular apparatuses of the liver, brain, and lungs, especially suffering derangement.* Numerous instances present themselves in practice, of consecutive affections of complicated character as the disease advances, during hooping-cough, dry catarrh, asthma, &c.; the heart, the brain and spinal cord, and their membranes, the portal circulation, &c., becoming secondarily affected; in addition to organic changes often also produced in the lungs themselves, and in their investing membranes.

The connection subsisting between dilatations, often slight, of one or more of the cavities of the heart, and between lesions of the valves and orifices and congestions of the subordinate orders of the vascular system just specified, more especially those of the lungs and brain, is sufficiently obvious, particularly when the heart betrays any of these lesions. But there is every reason to infer that congestions of the lungs may actually take place to even a fatal extent, without any very obvious organic lesion of the heart, or lesion of such an extent as can account for the occurrence. Thus, severe shocks to the nervous system, severe injuries of vital parts, and agents acting with great intensity, and either inordinately depressing or exhausting vital power, occasion remarkable congestion of the lungs, sometimes also of the other subordinate orders of the vascular system, and generally also with a dilated or relaxed state of the parietes of the heart's cavities. Congestion of the lungs, however induced even in slighter grades, is a serious morbid condition, inasmuch as it arises from, or is connected with, various other lesions, either of vital action or of structural change, especially of the parts now stated; and, as it generally leads on to further alterations, to inflammatory action, to hæmorrhages, and various organic lesions, especially when neglected or improperly treated. *Med. Gaz., Nov.* 12, 1847, *p.* 842.

ORGANS OF RESPIRATION.

31.—ON THE STRUCTURE ON TUBERCLE.—By Dr H. Lebert.

The invariable elements of tubercle are the following:

1. A large amount of *molecular granules*, perfectly round, whitish-gray in color, or passing into yellowish, sometimes compact, sometimes appearing slightly transparent in the centre, from 12-10000 to 27-10000 of a millimetre in diameter. These granules are found, in particularly large amount in softened tubercle: in crude yellow tubercles, they conceal, and often prevent the recognition of, the peculiar tubercular globules.

2. These granlues and the peculiar *corpuscula*, presently to be more minutely described, are closely united to each other by means of a *hyaline intercellular substance* of moderate consistence. This substance becomes first fluid in the softening process. Though the two now mentioned constituent parts present nothing characteristic, we have yet to notice the most important—the peculiar constituent part of tubercle. These are the proper tubercular *corpuscula*, which I have described as globules or corpuscles peculiar to tubercle, in the last edition of the work of Louis.

The shape of these *corpuscula* is seldom entirely round, though it is probable that, at the first separation of tubercular matter by capillary transudation, they approach the globular shape, and that they acquire an irregular figure by the narrow space in which they are deposited, and by mutual compression. But in the circumstances in which they are usually placed under the microscope, they present manifestly an irregular figure, being sometimes spherical, sometimes approaching the oval shape. They are usually irregularly angular and polyhedral, with edges and angles most commonly rounded, as is seen very distinctly when they are allowed to float in water, or serum, or any other thin fluid. Their color is clear yellowish. Their exterior is throughout irregular. We observe in them a heterogeneousness of content which gives the interior sometimes a flocculent, sometimes a cloud-like or nebulous aspect; but never did I find in them genuine *nuclei*, notwithstanding the greatest care employed for the purpose, either with the best magnifying powers or with different chemical re-agents.

There are, indeed, mostly dispersed in the interior substance of the tubercle irregular *molecular granules*, scarcely exceeding 25-10000 of one millimetre in size, sometimes only from 12-10000 to 15-10000 of a millimetre; these granules, three, five, ten, or more in number, are throughout not visible in the like layer in a determinate type. The intergranular substance in many respects invests them firmly without clear covering; the interior of the granules I never found transparent. The magnitude of the tubercular cells varies; those most spherical are from 5-1000 to 75-10000, sometimes [illegible]-100 of a millimetre in diameter. The oblong tubercular cells I found on an average 75-10000 of a millimetre long, and 5-1000, to 6-1000 broad.

Edinburgh Med. and Surg. Jour., April, 1848, *p.* 317.

[illegible]—ON HEAUTOPHONICS; A NEW METHOD OF AUSCULTATION.—By G. Corfe, Esq., Middlesex Hospital.

There is an instructive point which the voice elucidates in the formation of a diagnosis of thoracic diseases; and it is the following:—that by your own voice, practised upon the chest of a patient with certain morbid changes in the lungs, you may glean some very valuable information respecting the condition of those organs. Dr. R. G. Latham proposes the classical title of "Heautophonics'' to this diagnostic help.

But in order to simplify my meaning, the following illustration may be given.—Let an individual hold a hat in his hand, and, putting his face close to the hollow, let him talk into it for three or four minutes; he should practise this adjoining to a corner of a room where an angle is formed by two wall pieces of wainscot; and, having thus talked, let him suddenly shift his head and talk into this angle of wood, and instantly his voice falls a semitone or more. Let him repeat the experiment both ways alternately, and he will soon satisfy his mind, especially if he has a moderately good ear for detecting variations of sound, that, as he talks into his hat, his voice is raised half a note, and *vice versa*.

This curious study should be pursued several days, and repeatedly gone over, before the voice can be made subservient to the detection of disease in a patient; but when the ear is pretty well tutored, and can distinctly detect the modification of sounds of one's own voice—whether the individual talks into the air, into a hat, into an angle of wood, or into one of stone—he can then place his ear over the base of the heart of a vigorous, healthy man, and recite some portion in an even and in an audible voice, or, what is preferable, he may count from fifty to one hundred, and then he should carry his ear to the subclavicular region of the right side, and again talk loud, and he will find that his voice rises nearly half a tone in the latter spot. To prove this study pathologically, he should now place his ear over the latter spot of a phthisical patient, who is laboring under complete solidification of one of the upper lobes, and once more count upwards, then shift his ear to the lower lobe of the opposite lung, which we will presume is healthy, and count again, and the voice which was bass, resonant, and vibrating to his own ear in the first spot, will become raised or more tenor, less resonant and less ringing, in the latter spot.

The same observation applies also to the alteration of one's own voice when we talk over the solidified lung of a pneumonic patient, who is laboring under that stage of the disease known as red hepatization: whereas, on the other hand, if there is a cavity in the upper lobes, as in phthisis, or a permanently distended lung, as emphysema, a well-tutored ear will notice that, as he talks over such spots, the voice is imperceptibly raised a barytone, and, *vice versa*, a semitone. But again, if the chest is full of fluid, as in dropsy of the pleura or in empyema, the voice of the auscultator, like the percussion, emits only a "son mat," a dead, non-vibrating, non-resonant sound. These, then, are the fundamental principles of the science of heautophonics.

During the whole of these studies, the patient, of course, is a passive agent, and therefore is not required to take any part in the proceedings; indeed, if you begin by catechising him first, as in the usual mode of auscultation, in order to hear his own voice, or his respiration, &c., you will be sadly perplexed by his interruptions when you attempt to auscultate your own voice through the medium of his chest, if I may be allowed such an expression, as he thinks probably that you are talking to him, and that, therefore, he must get some answers for you concerning his feelings, &c.

By these means the chest of the patient is used as a stethoscope, or is made a medium for auscultating the organs within, through the medium of the voice of the practitioner.* If any of my readers are credulous upon these points, let them amuse their ears and exercise their voices upon the chests of half a dozen healthy men, and their scepticism will very soon vanish, for they have no power to control their own alterations of intonation, since they depend upon the greater or lesser conducting power of the surfaces over which the voice is thrown. Of course, if the surface is spongy and loose, like a feather pillow, the conducting power is very small; but if the ear is laid upon a solid oak chest of drawers, the reverberation of the voice through the conducting power of the wood lowers the tone half a note.

Medical Times, Jan. 15, *p.* 955.

In summing up the amount of information which the study of *heautophonics* will afford us in the detection and accurate diagnosis of thoracic diseases, it will run thus:—

1. That, if the ear of the heautophonon is placed over a portion of lung which is solidified, the voice of the speaker becomes sonorous, vibrating, and more resonant.

2. If the pleura is filled with fluid, the voice of the operator is muffled; there is less vibration of tone upon the chordæ vocales than under a healthy lung.

3. If there is a tubercular excavation which is nearly dry, the voice in the heautophonon rises, is shriller, sharper, more nasal, and much more resonant than in the first instance. If there is permanent distension of the lungs from emphysema, the heautophonon elicits a dull and dead sound, and which, if long continued, gives rise to a painful sensation at the centre of the operator's *sternum;* just the very opposite effect, however, is produced by repeated and long-continued use of the instrument over a *solidified* lung: in this case the *forehead* of the operator becomes jarred, from the reverberation of sounds, which the various sinuses in the head and face greatly augment, so that a novice in this curious study will find himself occasionally suffering from weight and distress over his brows, if he uses the voice too much over solid substances for one continued period of time. But another singular feature in the use of the heautophonon in solidification of the lungs is this: that the patient *feels* and *hears* your voice in the chest, and *the extent* to which he does so will always correspond with the extent of the solidification. *Medical Times, March* 25, *p.* 423. 1848.

[In the application of heautophonics to the diagnosis of chest disease, Mr. Corfe goes on to say,—]

In *hydrops pericardii* the countenance is more anxious and distressed than in mere valvular disease; the orthopnœa is greater, the alæ nasi are more active in the respiratory movements, there are more fulness and greater dulness over the præcordial region, than in the chronic form of cardiac disease: whilst the sounds of this organ are distant and less marked to the ear; by the use of the *heautophonon* we may, moreover, pretty well judge of the extent of the effused fluid, and of the boundaries of the distended pericardium.

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* This principle is fully understood and acted upon by singers, performers on wind instruments, &c. The presence of curtains, drapery, and much glass in a room, tends to oppress the chest of the performer or singer to a painful degree; and this effect is fully obviated in the construction of those public edifices which are designed for oratory, or for preaching, singing, &c.

While in *hydrothorax* or dropsy of the pleuræ, which not unfrequently attends the former effusion, the orthopnœa is not only severe, but the dulness on percussion is so marked, and the auscultator's vocal sounds are so manifestly altered over the seat of the fluid, that a mere novice in the school of auscultation can easily attain to a knowledge of the diagnosis of this form of thoracic disease. Neither is the recognition of unmixed or mere emphysema a difficulty. The barrelled chest, the clearness of percussion, the absence of a pure respiratory murmur, the hernia of the lung, shortly to be described, and, above all, the strong physiognomical characters of this disease, are so many illustrations of the morbid changes of the lung, that, I feel assured, if medical practitioners would only attend to these few simple principles in diagnosis, emphysema would be much more easily recognised than it generally is. But when, to this change in the pulmonary texture, there is superadded either dropsy of the lungs or of the pleuræ, or of both, and the case is somewhat more obscure, then the countenance is haggard, distressed, and dusky; the respiratory efforts are more laboured, and the auscultatory signs are more perplexing to the physician. The dulness on percussion, from the presence of fluid in the thorax, masks the physical signs of emphysema, and I know of no decided test which will enable us to ascertain that this complication of diseases exists except by the use of the voice of the patient, and by that of the auscultator. The former test is a negative evidence, and the latter is a positive one. When the ear is placed over such a chest behind, and the patient is encouraged to talk, the sound of his voice, and the thrill or vibration of that sound, are neither of them heard nor felt by the operator's ear or head. But, on the other hand, if the heautophonon is placed over the same spot, the practitioner's voice becomes muffled and deadened, just as it does when he talks with his mouth surrounded by a wet blanket or a feather pillow. I am aware that these physical signs are also met with in empyema of the chest, but this presents no difficulty whatsoever, inasmuch as the rise, progress, and symptoms of the last-mentioned disease in nowise correspond to those of emphysema, coupled with fluids in the lungs and pleuræ, so that an observing mind will be at no loss to form a diagnosis between the two.

Emphysema pulmonum, or that condition of lung which is produced by the escape of air from the cells of the lung into the cellular membrane which connects these cells together, is usually one of the main features of disease in asthmatical patients. These individuals always exhibit the very opposite state of respiration to that of a person suffering from pneumonia or pleuritis.

The thorax in this disease is acting in every part; the whole set of respiratory muscles are in full play; the shoulders are prominently thrown forward, the clavicles, as it were, buried behind them, and the diaphragm and abdominal muscles take an active part in the efforts of respiration; added to which, if the eye glances over the chest before and behind, whilst the trunk is erect, there will be a manifest and universal bulging of the ribs, so that the front of the thorax is rounded like a barrel; and this convexity is so great on viewing the posterior parts of the chest, that a flat, narrow board or ruler, laid over the ribs, will leave a considerable space in the region of the spine, and show that this bony canal is considerably lower than the convex surface of the ribs.

More need not be said upon this branch of the subject, as this alteration in the parietes of the chest must be quite as palpable at one cursory glance as any other deviation of symmetry in the form of the thorax from disease within its walls.

But an observation ought here to be made of a fact which will help to a decision on the nature of the disease before the ear is placed on the chest of such a patient. It is this: that if there is emphysema to any extent, and it has reached the upper lobes—for emphysema usually begins in the lower lobes, and spreads upwards—each act of coughing produces "hernia of the lung," so to speak, in that triangular space which is formed by the clavicles, sterno-cleido, and omohyoidei muscles. At this point, and at this point only of the thorax, we know that the pleura is wholly unprotected by muscle; and, as the lungs are jerked up by each distressing effort of hard coughing, the emphysematous lung and pleura are forced up into this triangular space, and may be seen as one distinct tumour.

This appearance alone has often enabled me to form my diagnosis of a pair of emphysematous lungs before I had even applied my ear to the chest.

It has been already stated, when treating of the morbid respirations in asthma and emphysema pulmonum, that the voice becomes altered, is sharp, shrill, and loud; and it may here be observed also, that such patients are usually very loquacious in the description of their complaints; there is a propensity in them to talk in long, unbroken sentences. The reserved air in the emphysematous lungs, if one may so term this pent-up or extravasated fluid, enables them to do this. *Expiration* is not the chief distress which gives rise to dyspnœa, for such is a prolonged, and not a very laboured, effort; but it is the short and distressed effort to *inspire* which is the main feature in the dyspnœa of this class of patients: they have, in fact, more air in their lungs than they want, so that, if the two actions of respiration are watched, it will be seen that the expirations compared with inspirations are five to two.*

In œdema, or dropsy of the lung, the thorax presents to the eye but little difference from the foregoing changes as noticed in the outset, except that there is no hernia of the lung visible, nor so much convexity of the whole thorax as in emphysema. The eye gathers but little additional information from this change of structure beyond the former disease.

By dropsy of the lung, is meant that fatal malady so often complicated with emphysema, in which after protracted struggles of the respiratory organs, the whole capillary system of the lungs suddenly pours out fluid into the pulmonary cells, but more especially into the tissue connecting these cells together. It is not the engouement or serous infiltration of the first stage of pneumonia, but a thinner aqueous exudation into the cellular substance of the lung itself; for serous effusion from pneumonia proceeds from the inflammatory vessels which are spread over the vascular air-cells themselves, whilst this exudation is almost wholly from the exocellular vessels, and by its rapid accumulation it drowns the lungs, and renders them useless, and death ensues from apnœa.

Dropsy of the pleura, or hydrothorax, is simply an effusion of serous fluid from the pleuritic capillaries into the cavity of this membrane. You will find the patient usually sitting upright in bed, or preferring to do so, if he can conveniently, either propped up by pillows, a bed-chair, or otherwise

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*The very opposite condition of voice, respiration, and manner of answering the questions put by the medical man, may be noticed in pneumonia, pleuro-pneumonia, and pleuritis, as contrasted with emphysema. The patient, in these diseases, fears to talk; the voice is subdued, as not much air is allowed to be thrown upon the larynx; in short, he has none to spare, we may say; and, as he attempts to answer your questions, there is an abrupt monosyllable or two uttered, and he stops before he has scarcely framed or uttered a small sentence. Nurses, the most experienced, cannot divest themselves of the notion that such patients are either peevish, obstinate, and are *resolved not* to answer; or else that they are deaf and cannot *hear* medical queries; or, lastly, that they are muddled (a phrase denoting with them incipient delirium), and cannot *understand* the questions. But, truly, neither of these suppositions is correct; and when nurses have begun to scold such patients for not answering the doctor's questions, especially in auscultating the lungs, when you desire to listen for vocal sounds, as œgophony or bronchophony, I have usually insisted upon their being silent; have desired the patient to cough, and the lungs have thus refilled to a greater amount than before, and they have been enabled to expand more breath, and so answer questions in a more prolonged manner.

choosing to sit up all night by the fire in an easy chair. As this disease is the sequel of some antecedent though relative and serious morbid change in the respiratory organs, as the heart or lungs, so the eye of the practitioner gathers more information from observing the *posture* of the patient, than from any particular change in the symmetry of the external parietes of the chest. This state of breathing, called orthopnœa, is always present in dropsy of the pleura, and, in addition to it, the lower parts of the chest are passive in respiration.

The attention of the reader should now be drawn to the main facts which are to be gathered from an ocular examination of the thorax and abdomen in three or four, at least of the most formidable diseases of the respiratory organs. 1. Pneumonia or pleuro-pneomonia. 2. Pleuritis. 3. Phthisis. 4 Emphysema, with or without dropsy of the lung.

In the first instance the surfaces of the air-cells are acutely inflamed; the air entering them is a source of irritation, and aggravates the patient's sufferings, therefore he is *unwilling* to admit it, at least no more than he is absolutely obliged to do. In the second instance he is unwilling to do so, not because the air-cells are irritated thereby, but because the full expansion of the lung over the inflamed pleura distends this inflamed membrane, and thus increases his distress.

In the third case the patient is *unable* to expand his chest and to allow a natural amount of air to pass in, because the solidification of the lungs on the one hand, and the firm adhesion of these organs to the walls of the chest on the other, render it impossible for him to inspire the same amount of air as a healthy individual does. Whilst, in the fourth instance, the respired air is wasted by its escape from the ruptured air-cells, or is spent over the interstitial cellular membrane connecting the air-cells together; so that although the patient is both willing and able to respire more than an ordinary column of air, yet, by his struggling efforts to do so, it is manifest that little air is actually employed in oxygenizing the blood, and that his sufferings are increased by the lungs being kept permanently distended.

Med. Times, March 18, 1848, *p.* 255.

2—AN ALPHABET OF AUSCULTATION.—By George Corfe, Esq., Middlesex Hospital.

Two Dry Sounds.—Rhonchus; Sibilus.

Two Moist Sounds.—Small Crepitation; Large Crepitation.

Three Vocal Sounds.—Bronchophony; Œgophony; Pectoriloquy.

Thus:—

Two Dry Sounds.—*Rhonchus.*—Rhonchus, or snoring, heard in the larger bronchi, is produced by an intumescence or œdema of the mucous membrane of the bronchi, on which phlegm impinges. This sound occurs especially at the bifurcation of the bronchi, where the membrane is bevelled off and is called by the French physiologists the "eperons," or spurs of the bronchi. When the fingers are spread out, the reflected skin from the base of one finger to that of the other, represents a magnified form of this reflection of the bronchial mucous membrane. The sound denotes the existence of bronchitis. The pathological change above described is well exhibited, in other respects, in conjunctivitis, when effusion exists beneath this membrane.

Sibilus.—Sibilus; wheezing, whistling, or cooing. Produced by the same cause as above described, with the exception that it originates in the smaller bronchi, so that the grave sounds of a bassoon, and the shrill sounds of a picolo, or the air drawn through the semi-closed lips well moistened with saliva, and through the larynx as in snoring, afford a tolerably accurate representation of these two bronchial sounds.

Two Moist Sounds.—*Small Crepitation.*—Small crepitation is the invariable symptom of the first stage of pneumonia, and is produced by the inspired columns of air passing through a series of inflamed pulmonary cells, which are partially clogged with sero-sanguinolent secretion. The act of rubbing the hair between the fingers gives some notion of this important diagnostic symptom. I need scarcely say that emphysema from fractured ribs and wounded lung will cause this sound also; but, as I do not wish to confuse the student by describing those morbid changes produced by traumatic causes, I shall omit any further notice of them now.

Large Crepitation is similar to the breaking of large soap bubbles, and is heard over the lower lobes behind, in cases of advanced or chronic bronchitis, the third stage of pneumonia, and in emphysema with œdema pulmonum.

Three Vocal Sounds.—*Bronchophony*, or increased resonance of the voice, is produced by a solid portion of lung acting as a better conductor of sounds than a vesicular or healthy portion: so that the voice of the patient rings under the ear of the auscultator. This solidification is either the result of pneumonia, or of a mass of aggravated tubercles in the upper lobes. In the latter case it is heard under the clavicles; in the former it is usually detected over the lower lobes behind.

Œgophony, or bleating of the goat. A sound peculiar only to the presence of a small portion of effused lymph between the surfaces of the costal and pulmonary pleura, the result of pleuritis. It is not heard when the effusion is copious, but it is again heard when the effusion is in the course of absorption. Hence it is an unfavourable ausculatory sign in the early, and a good one, in the latter, stages of pleuritis. This sound should be listened for over the lower lobes behind: the ordinary seat of the early occurrence of pleuritis.

Pectoriloquy is the effect of the intonation of the voice passing up the stethoscope as though it came from within the chest rather than from the mouth of the patient. Its production is the unequivocal evidence of a cavity in the substance of the lung, which cavity is usually in the upper lobes and therefore this vocal sound is to be sought for under the clavicles. If you place the stethoscope over the wings of the thyroid cartilage, and make the person talk, you have a fair specimen of this vocal sound in the above diseased change. *Med. Times, Jan.* 22, 1848, *p.* 273.

34.—ON CORYZA MALIGNA.—By Dr. C. West, Senior Physician to the Infirmary for Children, and Lecturer on Midwifery at the Middlesex Hospital.

[This name is given to an affection of the mucous membrane of the nose in children, which differs from the common coryza or "*snuffles*," in the graver character of the symptoms. There is abundant secretion of very tenacious mucus, or even of false membrane, in the nasal passages, sometimes extending even to the tonsils and palate. As the respiration through the nose is impeded or altogether prevented, the child cannot suck; and from the mouth being kept constantly open, the tongue and throat become dry, and deglutition is difficult. There is also usually extreme despression of the vital powers. These cases occur chiefly in the Continental Foundling Hospitals, but they are sometimes met with in this country. In a case which came before Dr. West, as a complication of scarlatina, the Dr. tells us that,]

A lotion was injected up the nostrils, composed of ʒj. of alum to ℥ij. of water, with great relief to the child, the secretion from the nares becoming more decidedly puriform, but less adhesive; and the child became able to suck a little. On the 28th, however, the child's powers seemed much depressed; it sucked eagerly, for the secretion from the nose had become almost watery, but it swallowed with much difficulty. A layer of false membrane of a yellowish-white color had now appeared on the soft palate and back of the hard palate, and on the tonsils.

A lotion of three grains of the nitrate of silver to an ounce of water was applied to the back of the throat, and a mixture of the extract of bark with ammonia was given every six hours. On the 1st of November the child was better, could swallow as well as suck well, and the false membrane had entirely disappeared from the mouth, but the palate was still red, and presented some broad superficial patches of ulceration. The subsequent recovery was tardy, but the immediate danger was over, and no relapse occurred.

The simple coryza calls, as I have already observed, for but little treatment, and, indeed, treatment appears to exert but little influence over it. It is desirable, however, if there be much difficulty in breathing, that the child be taken from the breast, though it may still be fed with mother's milk by means of a spoon, since the fruitless efforts to suck aggravate its sufferings, and should therefore be prevented. If heat of skin and other symptoms of fever attend its onset, some mild diaphoretic medicine, with a few drops of ipecacuanha wine, may be given, attention must be paid to the state of the bowels, and in the course of ten days or a fortnight the child will be found again breathing quietly, and the disease will have subsided. As the secretion becomes thicker care must be taken to prevent accumulating and drying at the opening of the nostrils, by which it would cause serious discomfort to the child. In the malignant variety of the disease local as well as general treatment becomes necessary. The tendency to formation of false membrane in the nares must be combated by injections of alum or nitrate of silver, while the condition of the fauces must be watched as narrowly as that of the nares, and similar applications must be made to them on the appearance of any unusual redness there, since the increase of vascularity is only the first stage of that process which terminates in the exudation of false membrane. At the same time, a general tonic plan of treatment will be called for, and care will be needed to secure the child's taking a proper quantity of nutriment, since its powers of suction and deglutition will in all probability both be impaired.

[Dr. West remarks that when a mild coryza continues for many weeks, it is generally of a syphilitic character, and is to be treated by small doses of [illegible] creta.]

Med. Gaz., Nov. 19, 1847, p. 868.

35.—CASE OF ACUTE LARYNGITIS.—By Dr. T. Ogier Ward.

[A maid-servant, twenty years old, having had a slight cold for a few days, was suddenly seized with pain in the larynx and dyspnœa, attended with heat of skin and very quick pulse. Twenty-four leeches were immediately applied, but the symptoms increased in severity; and suffocation seemed to be impending when Dr. Ward saw her. He says:]

I first gave her two grains of tartarized antimony in a little jam, which she swallowed with very great difficulty, making the same efforts as if she had the quinsy, though no affection of the throat was discoverable by the eye; and having waited some time, and finding no effect produced, I inserted a few grains of powdered alum into the tube of my caustic case, and blew them into her throat, which the alum readily entered during her efforts to inspire. Cough was instantly excited, and as soon as it had subsided I blew in more alum, with a similar result, until I had used about nineteen grains of alum at three insufilations. After the cough had ceased the third time, she said in a clearer voice that she was relieved, and began to breathe with more facility, the respirations falling from sixty to forty a minute, and the pulse sinking from 150 to 120. She now began to converse, and told me that the larynx was the seat of the pain, and that she felt a little thing of the shape of a heart in her throat that seemed to stop her breath. Soon afterwards the emetic began to act, she vomited freely, and in the course of half an hour she was out of immediate danger, though still suffering from pain in the larynx. Calomel and pulvis antimonialis, with saline mixture, were now ordered, and in a few days she completely recovered;

but, so different was her appearance the morning after the attack, from the subsidence of the fever, and the removal of the expression of anxiety from her countenance, that I failed to recognize her at my visit.

[Dr. Ward observes, that the difficulty of swallowing, and the fact of the patient's feeling a swelling at the back of the throat, indicate œdema of the epiglottis, and show that the case was imflammatory and not spasmodic. The œdema was rapidly removed, he thinks, by the application of the alum.] *Prov. Med. and Sur. Jour. March* 22, 1848, *p.* 144.

36.—ON THE TREATMENT OF CROUP.—By Dr. C. West.

[When an attack of croup is apprehended, we must confine the little patient to the bed-room, and give an emetic of ipecacuanha and antimony, followed by a mild diaphoretic with small doses of antimonial wine. And the patient must be sedulously watched, and visited late in the evening, so that we may observe the character of the respiration during sleep. But when an attack has actually come on, our treatment must be much more energetic. Dr. West thus details it:—]

The abstraction of blood, and the administration of tartar emetic, are the two measures on which your main reliance must be placed; and you must bleed largely, and give tartar emetic freely, remembering that if relief does not soon come it will not come at all,—that there is not danger only, but death in delay. I have never met with an exception to the rule which prescribes the free abstraction of blood in every case of severe idiopathic croup, when seen at an early period, and before the purple lips and livid countenance, and failing pulse, announce the long continuance of a serious obstacle to the free admission of air into the lungs. Even in very young children local depletion forms in these cases but a poor substitute for general bleeding, for it is not merely the abstraction of a certain quantity of blood that is needed, but its removal in such a manner as most speedily to produce an effect on the system. Bleeding from the jugular vein is preferable under these circumstances to venesection in the arm, since the latter often fails in children under three years old; and the blood never flows so freely as when taken from the jugular vein. It is not easy to state in figures the exact quantity to be abstracted, since the child's previous health, the intensity of the symptoms, and the effect produced by the flow of the blood, must all be taken into account in determining when to stop. Dr. Cheyne says, "The removal of three ounces of blood from a child between one or two years of age, or of six ounces from a child from eight to ten, generally appears to make a sufficient impression on the disease;" and this is a sufficiently near approach to a correct estimate of what is usually needed. The effect of free venesection is often very striking, and, as the blood flows, the respiration may be seen to become notably easier. But though the relief thus afforded is very great, it proves but temporary; and unless followed by other remedies, the symptoms will often regain their former intensity in the course of four or six hours. I have not seen any instance in which the repetition of general bleeding appeared indicated, but many of you will probably meet with such cases in the country. Local depletion I have occasionally employed with advantage a few hours after the general bleeding; but if you follow up the first loss of blood by the free employment of tartar emetic, you will often be spared the necessity of further depletion. It has been recommended, that in croup cases leeches should be applied to the top of the sternum rather than to the windpipe, since difficulty may be experienced in arresting their bleeding if applied in the latter situation, as children are very intolerant of pressure in that neighbourhood. The caution is worth bearing in mind, but if you superintend the application of the leeches yourselves, which in such a case you certainly ought to do, the advantage of drawing the blood as nearly as possible from the affected part will more than make up for the risk of some slight difficulty in stopping its flow.

To accomplish any real good by means of the tartar emetic, it must be given in doses of an eighth, a quarter, or half a grain every ten minutes until vomiting is produced, and the same doses should afterwards be continued every half hour, until decided and permanent relief has been afforded. The dose that at first caused vomiting, may, after it has been repeated a few times, cease to excite it, in which case we must increase it, and not rest satisfied with tolerance of the medicine having been established, since its utility appears to be closely connected with its emetic power. Nauseating doses of antimony have not seemed to me to check the disease so surely, while they cause a greater depression of the system, and thus mask the approach of the fatal event. A striking illustration of the superiority of emetic over nauseating doses of medicine is given by M. Valleix, who states that in thirty-one out of fifty-three cases of true croup, ipecacuanha and antimony were employed in full doses as emetics, and of these thirty-one cases fifteen recovered; while of the twenty-two cases in which their use was but sparingly resorted to, only one recovered.

If, after antimony has been thus administered for four or six hours, no satisfactory measure of improvement should have yet appeared, local depletion may be resorted to, or possibly a repetition of general bleeding may in some cases be ventured on. If the croupal symptoms, on the other hand, should have begun to abate, the antimony may be given at longer intervals; but you cannot be too much on your guard against being misled by temporary improvement, and abandoning the medicine too soon. Its use likewise is not to be relinquished by gradually diminishing the dose, and substituting a quantity sufficient only to induce nausea for that which caused vomiting, but a full dose should be given every hour or two hours, instead of every half hour, and if amendment continue, the interval may be prolonged to three, four, or six hours. It is now, after the severity of the disease has been subdued by antimony, that the time has come for the administration of calomel. From the very commencement of the attack, mercurial inunction may be had recourse to every two or three hours; but the action of mercurials is far too slow to overtake a disease which tends so *rapidly* to a fatal issue. At this period, however, calomel seems to have a *two-fold* utility; it counteracts the tendency to the formation of false membrane in the air-passages, and prevents or subdues that inflammation of the lungs which is so frequent and so fatal a complication of the disease. I usually employ it in doses of half a grain or a grain in children from two to five years old, every hour or two hours, in combination with minute doses of ipecacuanha, but interrupting its use at intervals, in order to give an antimonial emetic. The appearance of any exacerbation of the croupal symptoms, however, would lead me at once to discontinue the calomel, and to return to the energetic employment of antimony.

Med. Gaz., Jan., 14, 1848, *p.* 45.

[If the patient is seen too late for the employment of the anti-phlogistic treatment, or, if by the administration of antimony, &c., we fail to relieve the dyspnœa and stridulous or sibilant breathing, while at the same time the child is becoming cold, the pulse feeble, and the lips livid, we must adopt a totally different mode of treatment. This is thus recapitulated by Dr. West:—]

An attempt must be made to arouse the child from the state of collapse into which it is sinking, by placing it for a few minutes in a hot mustard bath, and emetics of the sulphate of copper should at once be administered. The sulphate of copper has been considered by some writers to be possessed of a specific influence over croup. I cannot, however, take this view of its action. It has seemed to me to be nothing more than an emetic of great power, and therefore especially applicable in cases where considerable depression exists, and where the stomach has consequently lost much of its irritability. I am accustomed to give it dissolved in water in quarter or half grain doses every quarter of an hour till free vomiting is produced, but have never trusted to it alone, in the same way as in an earlier stage of the disease I am used to rely on tartar emetic. I employ it with a twofold purpose; first, to obtain the stimulant action of an emetic: second, to prevent if possible the accumulation of false membrane in the larynx. Hence, if the child seem again sinking into a state of collapse, or if coma appear coming on, or if the dyspnœa become much aggravated, the sulphate of copper may again be used to induce vomiting. Your main object, however, must now be to bring the system as speedily as possible under the influence of mercury, though the attempt will very likely fail, and the most complete success by no means implies the recovery of your patient. With this view a grain of calomel may be given every hour to a child from two to three years old, unless the existence of profuse diarrhœa should contra-indicate its use; while, at the same time, a drachm of strong mercurial ointment may be rubbed into the thighs every two hours. If diarrhœa be present, the calomel must be given more sparingly, or even be altogether omitted: but the inunction may be used even more frequently.

In this stage of croup the decoction of senega is a medicine of great value, and may be given in combination with the carbonate of ammonia and tincture of squills every two hours. The pungency of the ammonia is best concealed by sweetening the medicine with treacle or coarse sugar, and mixing it with about a third of milk, and in this form children will seldom refuse it. No other remedy or combination of remedies has appeared to me to be so useful as a stimulant expectorant in the advanced stage of croup or bronchitis. The patient's strength must be supported by beef-tea, and a generally nutritious diet, and even wine may be indicated; though small, indeed, are the hopes that remain when the vital powers have sunk so low as to require its employment.

[When and where are we to apply blisters? Dr. West advises us to apply a blister to the throat in cases where after the employment of all proper bloodletting, and the exhibition of antimony, relief is not obtained within six hours. He thinks blisters to the sternum nearly useless, except when the disease has been checked by antiphlogistic remedies. Dr. West appears to think that the operation of tracheotomy is not very generally applicable to cases of croup as occurring in this country. There is a variety of croup of an asthenic character, in which the laryngeal affection is connected with pseudo-membranous inflammation of the tonsils, soft palate, and fauces. This may be an idiopathic disease, but is not commonly so. Dr. West observes:]

It is not as an idiopathic affection that this form of croup has come most frequently under my notice, but as a most *dangerous complication of some other disease, almost always of measles.* Under these circumstances it frequently disappoints the most well-founded hopes of our patient's recovery, sometimes running its course very rapidly, at other times so insidiously that nothing but the greatest care will secure us against overlooking this most fatal malady.

This variety of croup seldom begins until the eruption of measles is on the decline, or the process of desquamation has commenced. Its occurrence is most frequent from the third to the sixth day from the appearance of the eruption, but it oftener occurs at a later than at an earlier period. It is sometimes attended with well-marked symptoms from the very first, but it often happens that the character of the disease is masked, and its course insidious, and that the degree of suffering during life affords no correct index to the amount of mischief which may be revealed by a dissection after death. Of itself it is highly dangerous, and its hazard is increased by the frequent co-existence with it of inflammation of the lungs, which serves moreover to throw the symptoms of croup into the shade. When the laryngeal affection comes on three or four days after the appearance of measles, its presence is usually betokened by much more obvious symptoms than when it occurs after the lapse of a longer period from the febrile attack.

Sometimes, however, it developes itself unnoticed, simultaneously with the measles, and causes a fatal issue when the medical attendant is least prepared to expect it. The child in such cases is evidently more seriously ill than can be accounted for by the mere existence of measles: but he makes no definite complaint, neither are there any obvious indications of the special suffering of any particular organ. There are considerable drowsiness, disinclination to swallow, and reluctance to speak: but the cough may be very slight, and the respiration free from distinct croupy stridor, while the child speaks in so low a tone that it is almost impossible to appreciate any alteration of the voice. Under such circumstances, the most careful observation is needed to avoid error. The loss of voice should of itself direct attention to the state of the larynx; the cry should be listened to attentively; pressure should be made on the larynx, to ascertain whether much tenderness exists, and examination of the fauces should never be neglected.

[More frequently, however, the laryngeal affection attends the process of desquamation, and it is then almost equally obscure and insidious. But under whatever circumstances this form of croup may arise, it is attended by so much depression as to forbid the employment of active antiphlogistic treatment. Dr. West has occasionally applied leeches when the croupy symptoms were prominent; but, says he,]

The two means, however, on which I place my chief reliance are the careful and repeated cauterization of the fauces, and the employment of emetics. In most instances, a solution of a scruple of nitrate of silver in an ounce of distilled water, applied by means of a sponge or a piece of soft rag fastened on a small portion of whalebone, answers every purpose. If the deposit of false membrane be extensive, or the ulcerations about the tonsils present anything of a sloughy character, the strong hydrochloric acid, diluted with twice or thrice the quantity of honey, is a better application. At the same time that I adopt these local measures I employ the tartar emetic in the same manner as in cases of simple cynanche trachealis, except that it is not always desirable to give it in such frequently-repeated doses as in the other more active malady. If relief be not speedily obtained, a mustard poultice, or a blister should be applied to the throat. In any case where the vital depression is very considerable, the mustard-poultice only should be employed, since, under such circumstances, a vesicated surface in the child often does not heal favorably. The slower course which these cases often run, affords more time for the action of calomel than we often have in pure cynanche trachealis, and unless the presence of diarrhœa contra-indicates its employment, the remedy is one not to be omitted. It should then be given in doses of one grain every hour to a child of three or four years old, combined with a quarter of a grain of ipecacuanha; but if the symptoms be at all urgent, the emetic should be repeated every four or six hours, to detach any false membrane that may have been deposited on the fauces, and cauterization should be practised again to prevent their renewal. As improvement advances the remedies may be repeated at longer intervals, while expectoration may be promoted by the employment of the decoction of senega, with squills and ammonia, as has been already recommended. Care must be taken throughout not to depress the child too much by over active treatment; nourishment must be given from an early period, and even before it is safe to discontinue the cauterization of the throat and the occasional employment of emetics, the extract of bark in combination with its tincture, or some other form of direct tonic, may be needed.

When consequent on measles, the same general plan of treatment must be adopted, though with far slenderer prospects of cure. The cauterization of the throat is in such cases especially necessary: and the ulcerated condition of the mouth is often much benefitted by the frequent application to it of a solution of two scruples of borax in an ounce of water. The tendency to diarrhœa often prevents the employment of calomel, while, owing to the weakened state of the system, we cannot always venture on the use of antimony. In such a case, we may still have recourse to mercurial inunction; and while the local cauterization is most sedulously attended to, emetics of ipecacuanha may be given two or three times a day, or the sulphate of copper may be substituted for it, if it cause purging, or fail to vomit. Here, however, more than in the idiopathic form of the affection, we find in many instances a most urgent necessity for supporting the child's strength, even from the very first. The occurrence of pneumonia is the accident most to be dreaded in the progress of the case, and may require a modification of the treatment, though in its management the asthenic character of the affection must always be borne in mind. *Med. Gaz., Jan.* 28, 1848, *p.* 131.

37.—ON SPASM OF THE GLOTTIS.—By Dr. C. West.

[The early symptoms of spasm of the glottis (*syn.* cerebral croup, spasmodic croup,) are those ailments popularly ascribed to teething; the child droops, loses its appetite, is restless and fretful. After a few days or weeks, a slight crowing sound of a characteristic kind, something between the stridor of true croup and the hoop of pertussis, is heard with the breathing. It returns in a few hours or days: and bye-and-bye an attack of severe dyspnœa accompanied by carpo-pedal contractions comes on. It is needless further to enter into the symptoms of this disease; suffice it to say that they are such as betoken "disturbance of the nervous system in general, and of the respiratory nerves in particular."]

"The causes," says Dr. West, "that may produce such disturbance are very various, and according to them must our treatment be diversified. Many writers have overlooked this fact, and, fixing their attention on some one cause, have given a defective, if not an erroneous explanation of the nature of the affection. But this is not the case with Dr. Marshall Hall, whose application of the discovery of the reflex function of some of the spinal nerves receives some of its most beautiful illustrations from this affection.

It is, says this distinguished physiologist, an excitation of the true spinal or excito-motory system. It *originates* in—

I. 1. The *trifacial*, in teething.

2. The *pneumogastric*, in over- or improperly-fed infants.

3. The *spinal nerves*, in constipation, intestinal disorder, or catharsis. These act through the medium of—

II. The *spinal marrow*, and

III. 1. The *inferior or recurrent laryngeal*, the constrictor of the larynx.

2. The *intercostals* and *diaphragmatic*, the motors of respiration.

[By far the greater number of cases of spasm of the glottis occur during the period when the process of dentition is proceeding most actively—between the age of six months and two years. But the mechanical irritation of the teeth pressing on the gums is not always the immediate cause of the convulsive disorder; it is frequently referrible rather to the irritation produced by the affections of the mucous membranes which are so common at this period. Or the exciting cause of the affection may be enlargement of the bronchial and cervical glands, the prehension of improper food, or the suppression of long-continued diarrhœa: or the disease may supervene in the course of chronic hydrocephalus. On the treatment of spasm of the glottis, Dr. West says, that it]

Must be regulated by the nature of its exciting cause; and this, as you have already seen, varies much in different cases.

In infants, before the period of dentition, it is usually induced by over-feeding, or by food of an improper kind. Our inquiries, therefore, must at once be directed to ascertain how the infant is fed; and, supposing it to be still suckled, it will be wise to interdict any other food than the mother's milk,

—or, at most to allow only a little barley-water. Spasm of the glottis, however, occurs much oftener in infants who are brought up by hand, or in those who have been weaned, than in children still at the breast. In such cases, much pains are sometimes necessary in order to ascertain precisely the kind of food that best suits the infant. Two parts of milk, and one of barley-water, sweetened with a little loaf sugar, or equal parts of milk, and of a solution of isinglass, made of the thickness of barley-water, generally agree very well: but much caution must be used in the introduction of farinaceous articles into the child's diet. Asses' milk, which forms the nearest approach to its natural food, must sometimes be given till the child has decidedly improved; while if it be puny, and do not appear to thrive, and the crowing inspiration continue undiminished, it may become absolutely necessary to restore it to the breast.

The state of the bowels requires no less attention than the regulation of the diet. The tendency to constipation must be combated not by drastic purgatives, but by mild aperients. Castor oil often answers the purpose very well, but sometimes each dose of it nauseates a child for several hours, and then it is not desirable to employ it if a daily aperient should be needed. Both senna and manna are apt to gripe, and if they be found on trial to produce this effect, their use must not be persevered in. Few medicines act more mildly or more certainly in children than aloes; and the bitter of the compound decoction may be much concealed by extract of liquorice. The bulk of a medicine, however often opposes a great difficulty to its employment in infancy, and if that be the case, the powder may be substituted for the decoction. If slightly moistened, mixed with a little coarse sugar, and placed on the tongue, it will often be swallowed very readily. The habitual use of mercurials to overcome the constipation is not desirable: their employment is better limited to those cases in which the bowels are not only sluggish, but the evacuations unnatural in character.

The action of the bowels may be encouraged by rubbing the abdomen twice a day with a liniment composed of equal parts of soap liniment and tincture of aloes; or the bowels may sometimes be induced to act regularly in young infants, by the daily employment of a small soap suppository. Enemata may also be employed for the same purpose, consisting either of warm water or gruel.

[Lancing the gums will frequently, but not necessarily, Dr. West thinks, be called for, if the disease occurs during the period of dentition. If there is much uneasiness in the head, it is useful to get a horsehair cushion made for the head to rest upon, with a hole in its centre so as to relieve the occiput from all pressure. If the cerebral symptoms are severe, we may use the tepid bath, give neutral salines with small doses of hyoscyamus, and occasionally even apply a leech to the head. In the paroxysm we may place the lower extremities in a hot bath while we dash cold water on the face, and try to excite vomiting by tickling the fauces. It is also our duty to warn the parents that all excitement of the child, especially by crying, tends to bring on an attack of the disease, as does also exposure to cold; and that death may take place suddenly and unexpectedly in one of these attacks.]

Med: Gaz., Feb. 11, 1848, *p.* 219.

38.—ON THE TREATMENT OF HOOPING-COUGH.—By Dr. C. West.

[In the first stage, Dr. West observes the most important measure is *care*. The child should be kept in a mild, dry, and equable atmosphere, and take light and unstimulating diet. If there is much cough we may give small doses of ipecacuanha or tartar emetic; and if much wheezing, an ipecacuanha emetic every evening. In the *second* stage, Dr. West says:]

If the paroxysmal character of the cough be well marked, and the fits of frequent occurrence, but the child in other respects ails little, much benefit will accrue from the use of hydrocyanic acid. It may be given by itself, diffused in a little distilled water sweetened with simple syrup, and I usually begin with a dose of half a minim every six hours for a child nine months old. This remedy sometimes exerts an almost magical influence on the cough, diminishing the frequency and severity of its paroxysms almost immediately, while in other cases it seems perfectly inert, and, again, in others, without at all diminishing the severity of the cough, it exerts its peculiar poisonous action on the system, so as to render its discontinuance advisable.

I have never but once, however, seen really alarming symptoms follow its use, though I have employed it in many hundreds of cases. In that instance I gave one minim of hydrocyanic acid every four hours to a little boy two years and a half old. He had hooped for four days before he came under my care, and was then suffering from rather severe cough. and considerable dyspnœa. He took the acid for four days without any effect being produced either on his system generally or on the cough; but at the end of that time, after taking each dose, he uttered a cry, became quite faint, and would have fallen if not supported. This result having followed three or four times, the child's mother discontinued the medicine, and, of course, I did not resume its employment. Similar, though less severe symptoms were produced by the same medicine in the sister of this child, a little girl of five years of age, but in neither instance was the severity of the cough in the least mitigated by it. Though no other instances of the kind have come under my notice, I always give a caution to the parents to diminish the dose of the medicine, or even entirely to discontinue it, if the child appear faint, or dizzy, or bewildered, after its administration; and I never persevere with the use of the acid if it do not give a very decided earnest of good within three or four days after its first exhibition.

In many instances, although the severity of the cough may be greatly relieved by the hydrocyanic acid, it yet does not enable us entirely to dispense with other remedies. If there be much wheezing at the chest, an emetic of ipecacuanha should be given once or twice a day, in order to free the air passages from the mucus which collects, often in very considerable quantity, and thus tends, by the obstruction it offers to the free admission of air, to favour the occurrence of carnification of the lungs. The degree to which the child suffers from the accumulation of phlegm in the bronchi must determine whether the emetic be given once or oftener during the day. If it be given but once, the evening should be the time selected for its administration; and, after the air tubes have been thus relieved, the child will often rest well, instead of passing, as it otherwise would do, a restless night, disturbed by dyspnœa and frequent fits of coughing. If there be a good deal of febrile disturbance, if the cough be hard as well as violent, if it seem to occasion pain, and be unattended with expectoration, while in the intervals of the paroxysms a frequent short hacking cough distresses the child, and generally diffused rhonchus is heard throughout the lungs, the hydrocyanic acid may be advantageously combined with small doses of tartic emetic or of the vinum ipecacuanhæ. In other cases, if the existence of considerable drowsiness, with a flushed face, becoming livid during the fit of coughing, and the suppression of the previously distinct hoop, betoken the presence of cerebral congestion, the application of a few leeches to the head will not only greatly relieve these symptoms, but will also diminish both the frequency and severity of the cough, and prepare the way for the more effective employment of the hydrocyanic acid.

[Dr. West does not think counter-irritation of much service until the decline of the disease, except there be much dyspnœa, when the chest and spine may be rubbed daily with Roche's embrocation, or soap liniment with tinct. lyttæ, so as to keep up a slight degree of redness on the surface. We are likely to over-treat a patient, when, in the second stage of the disease, a sudden increase of fever, and the supervention of permanent dyspnœa seem to indicate inflammation of the lungs. Against this Dr. West cautions us, saying :]

In such a case, then, I would advise you to allow nothing but the positive evidence of auscultation to lead you to resort to free depletion and the use of large doses of tartar emetic,—remedies to which you might feel disposed at once to have recourse. If you feel in doubt, remain for some time with the child, watch it carefully, auscultate it more than once during your visit, and repeat your visit every two or three hours, rather than resort at once to measures which, powerful either for evil or for good, may, if unwisely employed, destroy the life they were intended to save.

Example teaches louder than precept, and you may learn a useful practical lesson from the following history :—

A little boy, about two years old, had had catarrh for a fortnight, and towards the end of this time it was thought that he had hooped once or twice, though very slightly. He ailed but little, and had had none other than domestic remedies during this period ; but one night, without any apparent cause, he became very feverish, his cough grew worse, and his respiration very hurried. On this account he was depleted freely by leeches, and calomel and antimony were given in large doses for two days, though without any considerable diminution of the dyspnœa. When this treatment was first adopted, it was thought that air entered one lung but scantily ; but on the evening of the second day both lungs admitted air equally well, although a good deal of mucous rale attended the respiration. On the morning of the third day, the child's face was flushed, and looked much oppressed, his lips were rather livid, his respiration was extremely hurried and irregular ; he coughed little, but his cough had a suffocative character, and was not attended by a distinct hoop. The hurried respiration was supposed to indicate the continuance of graver mischief in the lungs than was apparent on auscultation, and antimony was accordingly given in emetic doses. It did not produce much sickness, and the respiration diminished but little in frequency during its employment. On the fourth day the child still breathed very hurriedly, and its inspirations varied from 40 to 60 in a minute, without there being any obvious cause for these great changes in its frequency. On the fifth day the breathing increased in rapidity, while the pulse began to lose power ; and not only had the antimony ceased to exert any emetic power, but squills and ipecacuanha failed to induce vomiting.

Active measures were suspended towards the evening of this day, and a grain of Dover's powder, given every six hours, somewhat diminished the hurry of the breathing, but it was discontinued after the third dose, on account of the gradually deepening drowsiness of the child. The child, however, still continued heavy and oppressed, the cough became more frequent and more suffocative, the breathing more rapid and more irregular. On the morning of the seventh day, a fit of coughing terminated in convulsions, and from that time until the morning of the eighth day, when the child died, they were extremely violent, frequent in their return, followed by carpopedal contractions, which did not subside in the intervals between them, while after each convulsion the respiration became most distressingly hurried and irregular. After a time the breathing grew constantly laboured, the face became of a deep livid colour, the hands were clenched, and the wrists bent upon the fore-arm, the spine was drawn slightly backwards, and sensation was quite abolished. At length a slight convulsive movement passed across the face, and the limbs relaxed in death.

Even when acute bronchitis really exists, you must not forget the peculiar impress which hooping-cough stamps upon it ; how it heightens the irritability of the spinal system, thus exciting the hurried and irregular breathing, and rendering the child peculiarly liable to convulsive seizures. If active interference, therefore, be necessary, you would abstract blood very cautiously, while you would employ nitre, ipecacuanha, and James's powder in small doses, as a febrifuge and expectorant, rather than attempt to bring the child rapidly under the influence of antimony. At the same time, however, the peculiar tendency to obstruction of the air-tubes, and consequent collapse of the lungs, which characterizes hooping-cough, would lead you to endeavour to keep the bronchi free, by the administration, once or twice a day, of an emetic of ipecacuanha. You would employ liniments, mustard-poultices, or blisters to the chest, to combat any exacerbation of dyspnœa; and if the paroxysms of cough were severe, you would combine hydrocyanic acid with your other remedies. If the powers appeared to be on the decline, and the child neither expectorated with the cough nor rejected much phlegm by vomiting, although the bronchi were loaded with mucus, you would at once discontinue antiphlogistic measures, and have recourse to the decoction of senega, with ammonia and squills, while you endeavour by a nutritious diet to support your patient's strength.

[In the *third* stage, change of air is the chief thing to be recommended. If, however, there is much bronchial secretion, with a cool skin, moist tongue, and a soft pulse, Dr. West says:]

Alum, long a popular remedy in hooping-cough, is often of much service, diminishing the secretion, arresting the sickness, and rendering the cough much less frequent. It may be given in doses of gr. iij. or iv. every four or six hours for a child of a year or eighteen months old. This remedy, indeed, may sometimes be used with advantage, even before the disorder has begun to decline, if the condition be such as I have just referred to, namely, fever being absent, and the bronchial secretion very abundant, even though the cough is violent. In other cases in which the cough continues violent after the other symptoms have abated, and in which, though there is no superabundance of secretion in the air-tubes, yet the attacks of cough often end with the rejection of a considerable quantity of mucus from the stomach, and loss of appetite and general dyspeptic symptoms are present, the hydrochloric acid is often of much service. It has been recommended as a specific against hooping-cough, in doses of from ʒij. to ℥vj. daily, but I have never employed it in other than moderate doses, such as it would be administered in under other circumstances.

If the cough continue frequent, and the hoop loud, while the only signs of constitutional disturbance are those of mere weakness, iron will generally put a stop to it sooner than any other remedy. If, however, there be a degree of feverishness, or of gastro-intestinal-disorder, which for the present contra-indicate the use of iron, Battley's liquor cinchonæ may be given with great advantage, in combination with small doses of hydrocyanic acid; while every attention must, of course, be paid, by mild alteratives, and other appropriate means, to improve the condition of the digestive organs.

Med. Gaz., March 19, 1848, *p.* 399.

39.—ON THE FREQUENCY OF PULMONARY DISEASE IN CHILDREN.—By Dr. C. West.

Table, showing out of 166 cases of children dying from various diseases, in whom I carefully examined the thoracic viscera, the number of instances in which the lungs, bronchi, and pleura, presented no signs of recent inflammation; and also those in which signs of it were discovered.

The first line represents the former, and the second the latter class of cases.

Under 1 mth.	From 1-6	From 6-12	From 12-18	From 18-2ys	From 2-3	From 3-4	From 4-5	From 5-6	From 6-7	From 7-8	From 8-9	From 9-10	From 10-11	From 11-12
4	12	15	12	4	10	6	4	6		2	1	2	1	
	3	10	13	15	12	9	8	4	3	4	2	2		2

This table illustrates the fact, that, when the child is first born, the mucous membrane of the respiratory organs is endowed with but little of its susceptibility which it afterwards acquires, and that accordingly those diseases whose point of departure is from that membrane are far less frequent during the first six months of life than they become during the succeeding eighteen months; while, from the completion of the second year to the time of puberty they go on diminishing in frequency and fatality. But there are important practical inferences which may be deduced from the facts we have just mentioned. They teach us not only that a catarrh is a much more serious thing in infancy than in adult age, but also that it is more serious at one period of infancy than at another, and they warn us to guard a child, during the time that the process of teething is going on, [illegible] care against all causes that are likely to excite inflammation of the respiratory organs.

There are some diseases which, after having occurred once, confer on [illegible] an immunity from subsequent attacks. This, however, is far from being the case with bronchitis or pneumonia in early life, but the susceptibility of the respiratory organs appears to increase in exact proportion to the frequency with which they have already suffered, and a child who has [illegible] attacked by inflammation of the lungs, or air-tubes, is more likely [illegible] a second attack brought on by a slight change of temperature, than one who had never suffered from it would be to experience a seizure from a much graver cause. With advancing age this susceptibility seems to wear out, the child outgrows it; but we should act most unwisely if we were to sanction its exposure to the cold with the view of hardening it against its influence.

Med. Gaz., Dec. 3, 1847, *p.* 957.

[illegible]—ON THE SOUNDS OF BRONCHITIS.—By G. Corfe, Esq.

The sounds peculiar to bronchitis, are usually heard during inspiration; but where they are heard, as in the above instance, during expiration, it denotes intumescence or œdema of the whole mucous membrane of the bronchi, and is a much worse symptom than the former. This membrane is reflected from tube to tube, at their several bifurcations, just in the same manner that the skin, at the bases of the fingers, is reflected from the bottom of one phalanx to its adjoining phalanx, so that, whenever any ropy mucus is secreted from the membrane, it is driven upon this œdematous [illegible] of the bronchus, and thus gives rise to these sounds, whilst the air is forced over them in expiration. I observed that it is a much more serious indication than rhonchus heard during inspiration, because the latter physical sign merely denotes slight irregularity in the bronchial surface from inflammation: whilst the former cannot occur without some effusion under, [illegible] thickening of the membrane. I have frequently witnessed a sudden attack of suffocating dyspnœa supervene from this fierce irruption of bronchial œdema. and when it occurs in combination with cardiac disease, or with emphysema of the lungs, it frequently carries the patient off in a very few hours. The difficulty of breathing under such circumstances does not arise from any trouble to inspire, but from the inability to expire; the air cannot force its way *out;* so that the expirations are threefold more laboured and prolonged than are the inspirations.

Med. Times, March 11, 1848, *p.* 391.

[illegible]—ON SOME OF THE EFFECTS OF BRONCHITIS IN CHILDREN.—By Dr. C. West.

Whenever bronchitis has reached such an intensity as to give rise to the [illegible] pouring out of thick fluid into the air-tubes, so that the air can no longer permeate them with facility, while this difficulty is still further increased by the loss of the ciliary epithelium, and by the weakening of the contractile power of the bronchi, which would have helped to keep them free, it often happens that the feeble inspiratory power of the child becomes wholly inadequate to fill the lungs, large portions of them collapse, and bronchitis thus becomes the indirect cause of carnification of the lung.

In some cases, the inflammation of the respiratory mucous membrane extends further than usual along the smaller bronchi, until it involves their extremities and the pulmonary vesicles themselves, when it produces an appearance almost peculiar to childhood, and which has been described under the names of *vesicular pneumonia* or *vesicular bronchitis*. A lung, or a portion of lung, thus affected, no longer contains any air—it is dark in colour, and feels tough, though solid; its surface is beset by a number of small, circular, yellow, slightly prominent spots, of the size of a millet-seed, or smaller; which on a hasty glance present a very great resemblance to crude tubercles. A very little attention, however, suffices to distinguish between them, for not only do these yellow spots differ from tubercle in their favourite seat being along the lower margins of the different lobes, but on puncturing any of them with the point of a scalpel, a drop of pus will exude, and the yellow spot will disappear. Sometimes, too, a minute bronchus may be traced, running to its termination in one of these little sacs. It has been suggested that this appearance may be due to the secretions formed in the air-tubes being forced by the column of air which enters in inspiration into the smaller bronchi and the pulmonary vesicles, the cavities of which thus become mechanically distended. The opinion that the secretions which occupy these parts are produced at the spot where they are discovered, by inflammation of the ultimate ramuscules of the bronchi, is, however, generally entertained, and is supported by very conclusive evidence. Bronchitis often exists unattended with this peculiar appearance; and on the other hand, vesicular bronchitis is met with independent of general inflammation of the air-tubes, while, though usually partial, and often limited to the lower border of one or other lobe, it is sometimes very extensive, and occupies nearly the whole of the lower lobe on either side, constituting the most important of the morbid appearances discovered on examining the chest.

It may, and unquestionably often does, happen that children die of bronchitis alone, and without any notable affection of the pulmonary tissue. But it is much more frequent for the pulmonary substance to bear a part in the morbid process, and this share may either be limited to mere congestion, or may rise in degree until it produces all those consequences which we find attendant on inflammation of the tissue of the lung in the adult.

Some degree of *congestion of the lung* is almost constant if bronchitis be at all severe, for the circulation through the organ is disturbed, the blood flows less freely than natural, and its changes take place more slowly. It stagnates first in those depending parts whence position renders its return most difficult, and the portions of lung thus affected become by degrees more and more extensive. Dark, solid, non-crepitant patches may often be seen in the midst of a lung thus congested; and until the results of inflammation shewed that a wrong interpretation had been given of the appearance these patches were regarded as the centres whence the inflammation was extending to the surrounding tissue. You do not need to be reminded that they are lobules which have collapsed and become impervious to air; and portions of lung in which this occurrence has taken place seem to have but little disposition to become the seat of active inflammation, and to pass into a state of red or grey hepatization. At the same time, however, it must be borne in mind that this indisposition to active inflammation does not by any means amount to actual immunity from it; and that carnified lung may sometimes become softened, or even infiltrated with pus.

It does, however, happen now and then that the lung is found in a condition which may justly be called *lobular pneumonia*, as the result of the extension to the surrounding tissue of inflammation beginning in the air-tubes. Patches of lung will then be seen interspersed through the surrounding pulmonary tissue, of a vivid red colour, of various sizes, from that of a pea to that of an almond, irregular in shape, and not circumscribed exactly by the margins of lobules, as is the case with portions of carnified lung. This process going on in a number of different situations, the affected parts may at length coalesce, and a pneumonia, at first lobular, may thus eventually become generalized. Or, though this should not occur, the inflammation may yet go on in the isolated portions of lung to the infiltration of pus into its substance, or the actual destruction of its tissue, when a portion of the lung will appear riddled with small distinct abscesses, seldom larger than a pea, irregular in form, and communicating more or less evidently with a minute air-tube. They may be distinguished from the vomica produced by softened tubercle, partly by the absence of tubercular deposits in other parts of the body, and by their being almost always limited to a single lobe of one lung. Their own characters, however, are sufficiently well marked, for they are altogether destitute of those solid walls which the tubercular deposit forms around a phthisical cavity; though the yellow lymph which often lines them may be mistaken by the inattentive observer for tubercle. MM. Rilliet and Barthez mention having found the pulmonary tissue healthy except in the immediate periphery of these abscesses, but no instance of this kind has come under my own observation; the pneumonia having in each instance become generalized.

Med. Gaz. Nov. 19, 1847, *p.* 871.

6.—ON THE TREATMENT OF BRONCHITIS IN CHILDREN.—By Dr. C. West.

[If the child is strong, and there is much febrile disturbance, we may apply leeches at the commencement of the attack, or at a later period, if, while the child is still strong, there is much crepitation, and of a smaller character in the lower than in the upper lobes. Dr. West applies the leeches beneath the scapulæ, so that the child is not alarmed by seeing them, nor can it irritate the bites by picking them. We must carefully guard, however, against too much depletion, for as Dr. West observes,—]

There is in these cases the less excuse for over-depletion, since we are possessed in the tartar emetic of a most powerful means of subduing the disease. In a healthy child, suffering from a bronchitis of moderate severity, I sometimes give it in the form of James's powder, combined with a small quantity of calomel and ipecacuanha, every four hours for the first twenty-four or thirty-six hours. This combination usually acts on the bowels freely as well as on the skin; and if the child be now relieved, the calomel may be suspended, and small doses of antimonial and ipecacuanha wine may be given instead in a mixture..

A severer attack of the disease would call for the use of antimony in larger doses, so as to obtain its emetic effect at first, and afterwards, by the repetition of the remedy every hour or two hours, to keep the child for one or two days under its influence. Even in cases where the disease is not so severe as to require the energetic employment of antimony, there is generally an exacerbation of fever and dyspnœa towards evening, and this is often much relieved by an emetic of antimony and ipecacuanha, which may also in many cases be repeated with advantage in the morning, when the child having been asleep for some hours, during which the mucus has been collecting in the bronchi, it breathes with difficulty on awaking, until the air-tubes having been freely emptied by an effort at vomiting, the air is once more enabled freely to permeate the lungs. Even in those cases which at first required the constant use of large doses of antimony, it is a matter of importance to dispense with them as soon as we can with safety, and to substitute the use of emetics at intervals, while we employ some milder expectorant medicine between the doses of the emetic. It can scarcely be necessary to remind you that there are few medicines which exert so depressing an influence on the muscular powers as the tartar emetic. If, therefore, in a child whose air-tubes are already nearly filled with the abundant secretion, you carry the depressing effect of antimony too far, the air will no longer be inspired with force sufficient to make it reach the smaller bronchi, and collapse of the lung will consequently take place. It follows, then, that we must not venture to carry the depressing effects of antimony so far in the child as we may safely do in the adult, but when the medicine has either ceased to vomit, or is merely regurgitated without effect, we must either suspend it altogether or greatly diminish its dose, or merely give it at distant intetvals, so as to obtain its emetic action, while we allow time between the doses sufficient to allow of the child's perfectly recovering its powers. The effect of vomiting, on the other hand, is useful in two ways, for it not only empties the air-tubes of the mucus that obstructs them, but it also occasions several deep inspirations to be made, by which the air is drawn into the remotest parts of the lungs, and their tendency to collapse is thus prevented.

Your attention has on more than one occasion been called to the remarkable tendency of the nervous system in early life to sympathize in the affections of other parts. This tendency is often very evident in inflammation of the respiratory organs, and, accordingly, you must not always take the degree of dyspnœa in a case of infantile bronchitis as a measure of the affection of the lungs, since it may be only an evidence of the sympathy of the nervous system. If you treat this symptom actively without having first inquired into its import, you may destroy your patient. When first taken ill, indeed, the child's respiration was hurried and laborious; you applied leeches to the chest and gave tartar emetic freely, and the breathing, which grew less hurried and less oppressed, justified the wisdom of your treatment. But if the respiration again rise in frequency, and you, in order to reduce it, redouble the activity of your treatment, you may be disappointed in the effect that you hoped to obtain; the respiration may grow more and more frequent, and the child before long die in convulsions. If in such a case you had examined the patient with due care, you would probably have discovered that the dyspnœa was not associated with increase of the heat of skin; you would have learned that it had varied much within a few hours, sometimes subsiding and then returning without adequate cause; you would not have detected any deterioration in the results of auscultation, while you would probably have perceived in the half-closed eyes, or the thumbs drawn into the palms, signs of the disturbance of the nervous system.

This nervous dyspnœa sometimes occurs early in the disease, at a time when active treatment is evidently indicated; and while that plan is continued we shall best meet this symptom by applying a mustard poultice to the chest, and by placing the child as high as the pelvis in a hot-bath. The evening attacks of dyspnœa are often more effectively controlled by this than any other means. When these symptoms come on at a more advanced period of the disease, or in a child previously debilitated, they indicate that active treatment must no longer be persevered in. The antimony must be discontinued, or its dose greatly reduced, and the vinum ipecacuanhæ should now be given. The general restlessness will be much relieved by immersing the whole body in a warm-bath, which should not be employed at so high a temperature as when used for its counter-irritant action. At the same time attention must be paid to support the child's strength, by veal-broth, arrowroot, or other nutritious diet.

After the acute symptoms of bronchitis have been subdued, the subsequent convalescence of the patient is often protracted by the continuance of cough and wheezing respiration; symptoms which on a very slight cause are apt again to put on the more serious characters of the acute disease. In this chronic stage, a general tonic plan of treatment must be adopted, while at the same time much benefit will often be obtained by the employment of a stimulating liniment to the chest. The extract of bark is an extremely useful tonic, especially in cases where there exists any tendency to diarrhœa; while the wheezing is often relieved by the administration of an emetic of ipecacuanha every night. If the secretion in the bronchi be very abundant, the decoction of senega, with ammonia and tincture of squills, is often superior to any other medicine. If the bronchitis have supervened during dentition, you must not be surprised at slight relapses occurring just as each tooth approaches the gum. At other times, however, bronchitic symptoms continue for a long time, the expectoration being copious and puriform, while the child loses flesh, and the relations become not unnaturally apprehensive lest it should be phthisical.

With reference to antimony, it is while the emetic action of the remedy continues that you may hope for much from its employment; while you must be careful not to persevere in its use when the livid face and faltering pulse show that the aeration of the blood is nowhere duly carried on. A blister to the chest, and the stimulant expectorants, as ammonia and senega, may now be given, while the attempt may be made, by emetics of squills and ipecacuanha, to unload the bronchi at intervals of four or six hours. These are the cases, however, in which if you do not get the better of the disease at first, your subsequent remedies will probably be too tardy to overtake it. *Med. Gaz., Dec.* 3, 1847, *p.* 959.

43.—ON LOBULAR PNEUMONIA.—By Dr. C. West.

[Dr. West recapitulates the history of this disease by stating that it was long ago observed that infants and children under five years old died with many of the symptoms of pneumonia, and that the lungs presented peculiar morbid appearances; but similar appearances were found in children who, during lifetime, had presented no symptoms of pneumonia; hence, it was assumed that inflammation of the lungs was a very frequent accompaniment of almost all the diseases of infancy and early childhood, that it was often *latent*, and that it gave rise to alterations in the lung very different from those which it occasioned in the adult. These alterations are thus stated by Dr. West:]

One of the most remarkable peculiarities of this supposed infantile pneumonia led to its receiving the appellation of *lobular pneumonia*, as expressive of the fact, that it did not attack a large tract of lung, or the whole of a lobe at one time, but that it affected isolated lobules, which might be seen of a dark colour, solid, often depressed below the surrounding parts, and sinking in water if detached from the healthy tissue in the midst of which they were situated. Sometimes the affection was strictly limited to a single lobule, the boundaries of which could be exactly traced; and though it oftener happened that a cluster of lobules was thus hard, and dark, and solid, still there was no gradual shading off from the darker to the lighter parts, so that it was evident that in whatever way the disease extended, at any rate it did not advance by mere continuity of tissue. Sometimes almost the whole of one lobe was thus affected, a few lobules only still retaining a healthy aspect, and crepitating under the finger, and it often happened that the bronchi leading to it were full of mucus or pus, while at other times there was marked congestion of the lung, and in the midst of the congested tissue were two or three solid hepatized patches. All these circumstances, as it may be conceived, variously modified the morbid appearances. In the last case the lobular pneumonia was thought to be becoming *generalized*, or, in other words, the inflammation originally limited to certain lobules was supposed to have begun to extend to the adjacent tissues, constituting a kind of transition-state between the lobular aud lobar pneumonia. The lower edge of the different lobes, the whole of the middle lobe of the right lung, and often a very considerable portion or the whole of one or other lower lobe, were also sometimes found in a state to which, among other names, that of *carnification* was applied, on account of its close resemblance to a piece of muscular tissue. A portion of carnified lung showed the closest possible similarity to a lung that had been compressed by effusion into the pleura. It was dark, tough, solid, contained no air, presented a smooth surface when cut, yielded a small quantity of bloody serum when pressed, and, indeed, seemed, almost like a piece of flesh, in all which respects it resembled a portion of lung hepatized by lobular pneumonia, and differed from the lung of the adult when that has been rendered solid by inflammation.

[The observations of two French pathologists have thrown great light upon the nature of this disease, which has really no inflammatory character at all.]

MM. Bailey and Legendre state as the result of their observations, that the appearances to which the name of lobular pneumonia has commonly been given, are in reality produced by occlusion of the pulmonary vesicles. This occlusion may be the result either of their closure by the contractility of the lung, or of their parietes being compressed by an unusually congested state of the capillaries of the lung, or of the two causes combined. In either case they assure us that the inflation of the lung will remove the solidity of the lobules, and restore them almost, or quite, to a normal state.

[Dr. West gives the case of a little girl who had suffered from diarrhœa, but had no pulmonary affection, except dyspnœa, which came on three days before her death. The greater portion of the lungs was found dark, solid, and non-crepitant, and inflation restored the affected parts to the same state as the rest of the lungs.]

It is not possible to say why the child's inspiratory power grew too feeble to fill the lungs at one moment rather than at another, but few will doubt that it had become so just at the time when the dyspnœa occurred. A portion of the lung having become collapsed, the elastic ribs tended to render abortive any faint effort to draw in more air, and thus the vital flame went out for want of air to feed it.

[Sometimes, however, the occurrence of this state is long preceded by a defective performance of the respiratory function. A little girl who died at ten months old, and who had never been strong, was seized at the age of nine months with cough and emaciation.]

Four days before she died her breath suddenly became much oppressed, and her cough far more severe that it had been before. The dyspnœa rapidly increased, but her cough soon became less frequent. A few hours before her death her lips were quite livid, she was breathing from 80 to 86 times in the minute, the abdominal muscles acting most violently, but the chest being scarcely at all expanded. Auscultation detected nothing more than some rather mucous rale in the lungs. After death no tubercle was found in any organ, but large portions of both lungs presented the undilated condition, which disappeared entirely on inflation. The bronchi were pale and contained very little mucus, but the right side of the heart was greatly distended with coagulated blood, which its thin, pale, and flaccid substance had evidently been unequal to propel with the requisite vigor.

The imperfect respiration had here for some time manifested itself; the vital powers had long been feeble; nutrition had been ill performed, and the heart itself had shared in the general feebleness, till at length air ceased to permeate a large extent of the pulmonary substance, and the child died for want of air to produce the requisite changes in the blood. In both of these cases the lung collapsed because the inspiratory powers were too feeble to fill the minuter vesicles with air. The result is the same if the obstacle be increased as if the power be diminished, and hence the supervention of this state of lung becomes one of the most perilous, while it is one of the most frequent complications of infantile bronchitis.

A little girl, previously quite healthy, was seized when ten months old with symptoms of acute bronchitis, a suffocative cough returning in paroxysms, and sometimes followed by the rejection of a muco-purulent fluid. The symptoms throughout did not seem to allow of depletion, but ammonia, with decoction of senega and tincture of squills, and other expectorants of a stimulating kind, were given with temporary amendment. The child did not, however, appear to have undergone any marked change, either for better or worse, except that she had certainly lost both flesh and strength, when coldness, faintness, and exceedingly laboured respiration, suddenly came on, under which symptoms she died in the course of twenty-four hours.

A few recent adhesions were found on each side of the chest, between the costal and pulmonary pleura. The trachea contained a large quantity of muco-purulent matter, and the same secretion abounded in the bronchial tubes, many of which were filled by it, while nowhere did air-bubbles appear intermixed with it. There was some congestion of both lungs, especially posteriorly; the upper and posterior part of the upper lobe of the right lung, the whole of the middle lobe, and the posterior part and lower edge of the lower lobe, were dark, solid, non-crepitant, and depressed below the adjacent tissue. The same state existed in the whole inferior third of the upper lobe, and the lower edge of the lower lobe of the left lung. On inflating the lung, most of these parts were restored to a perfectly natural condition, but some patches still remained less dilated than the others, and some of the darker, almost violet-coloured, portions of the lower lobes appeared but little affected by it.

In the course of his investigations on the structure of the lung, Sir E. Home ascertained that during the momentary distension of the air-cells in respiration, an interruption is produced between the arterial and venous circulation in the lungs; the blood being carried no further than the small arterial branches surrounding the air-cells. Now, MM. Bailly and Legendre conceive that, on the other hand, a distended or congested state of the pulmonary capillaries may compress the air-cells, and reduce them to the same collapsed condition as sometimes takes place from a mere want of inspiratory power. This theory, too, I believe to have in it a large measure of correctness, and it is probable that the occurrence of this condition is due to a congested state of the vessels in many cases in which the accumulation of secretion in the air-tubes is not so considerable as to render them impervious to air, and in which long-continued illness has not exhausted the strength, and thus impaired the inspiratory power. It is thus, that in some cases of hooping-cough, where yet perhaps the quantity of fluid in the bronchi is not very considerable, we find after death a generally congested state of the lungs, and in the midst of the congested tissue, patches, more or less extensive, of a dark colour and solid texture, impermeable to air, but still admitting it, though perhaps not freely, on forcible inflation of the bronchi.

[A similar pathological state may exist in adults. Dr. Bailly has met with three cases, occurring in patients who died of exhaustion in fever. Dr. West tells us that,]

In two cases extreme dyspnœa occurred some days previous to death, but though the chest lost its resonance in the situation of the affected parts of the lung, and the breathing there was deficient, yet the minute crepitation of pneumonia was not detected in either case, but merely some large mucous râle. In addition to extensive disease which in each instance existed in the intestines, this collapsed condition of portions of the lung was found; unconnected with any disease of those organs in one of the cases, combined with the effusion of tenacious mucus in the bronchi leading towards the collapsed portion in a second, and associated with true pneumonia and a state of red and yellow hepatization of other parts in a third. In short, the three cases afford examples of the three distinct conditions under which we have noticed this occurrence in the child: the first being an example of collapse of the lung, the result of simple debility: the second illustrating its occurrence in connection with obstruction to the free admission of air into the lung; and the third showing it in combination with a congested state of the organ.

[Dr. West says that whenever the power of the inspiratory muscles is much diminished, there is a tendency to the supervention of this state, and that this does occur in old age. He observes:]

The term, second childhood, is not a mere figure of speech, expressive solely of the decay of the mental powers, by which the evening of life is obscured and made like the twilight of the mind in early infancy, but it is in many points the expression of a physical truth. Thus, as old age creeps on, and the nutrition is no longer adequate to supply the waste, the respiration loses the character which it presented in the adult, and the extremes of life in this respect present resemblance to each other. The muscles of the chest are no longer strong enough to dilate it fully, the diaphragm becomes, as it was in early infancy, the principal inspiratory muscle, and the vertical diameter of the thorax is that in which its chief enlargement takes place. The ear applied to the chest no longer detects the puerile breathing of youth, nor the clear vesicular murmur of manhood, but the respiration is coarser, sometimes almost bronchial. There is not, as in infancy, occasion for more rapid breathing to maintain the high activity of the vital processes, but the worn-out machinery needs be put in motion more frequently than in the adult, in order to obtain oxygen enough to support existence.
Med. Gaz., Nov. 5, 1847, *p.* 781.

TREATMENT OF PNEUMONIA IN CHILDREN.

[In idiopathic pneumonia, occurring in previously healthy children, depletion is as important a remedy as in the adult: and so also is antimony. Upon this subject, Dr. West says:]

In the treatment of the pneumonia of the adult we are accustomed to follow up the advantages gained by depletion by the administration of *tartar emetic*, and under proper restrictions, the remedy is no less valuable in early life. Given in doses of one-eighth of a grain every ten minutes till vomiting is produced in the case of a child of two years old, and continued every hour or two hours afterwards for a period of twenty-four or thirty-six hours, it subdues the fever and abates the dyspnœa in a most remarkable manner, often rendering a repetition of depletion unnecessary, and sometimes speedily removing all signs of the disease. It is not safe, however, in the great majority of cases, to place our dependence entirely on the administration of antimony. In cases of secondary pneumonia, especially if the affection of the parenchyma were preceded by well-marked bronchitic symptoms, antimony may sometimes be given at once without having recourse to the abstraction of blood previously, but, in pure idiopathic pneumonia, depletion either general or local ought almost always to precede its use. When antimony does good it generally gives an earnest of that good within a few hours from its first administration, and the production of some sensible effect, such as vomiting or very decided nausea, has appeared to me to be a condition of its utility; unlike what we observe in the adult, in whom the good results which it produces are sometimes independent of any appreciable influence on the general condition of the patient. When once complete tolerance of the medicine has been established, our subsequent conduct must be determined by the results of auscultation. Should that inform us that the physical condition of the lung has greatly improved, as well as the general state of the patient, the use of the remedy may be persevered in at somewhat longer intervals. If the signs of inflammation be advancing, and are perceptible in portions of lung previously free from disease, mercury must be employed, which may be combined with small doses of antimony, while large doses of that remedy may still be given to combat any sudden increase of fever or dyspnœa that may chance to supervene. If, notwithstanding a manifest diminution of the fever and reduction of the dyspnœa, bronchial breathing should have become distinctly audible, mercurials must at once be substituted for the antimony; and the existence in any case of extensive or well-marked bronchial respiration should be regarded as of itself contraindicating the antimonial plan of treatment. It is hardly necessary to state, that it is not my intention to say, that after the supervention of bronchial respiration, antimony ought never to be given, but only that it should not be employed except in small doses and in combination with other remedies.

In cases where the symptoms do not set in with such violence as to indicate the necessity for very large doses of antimony, or in which the disease has passed that stage when antimony so given is likely to be beneficial, *mercurials* may be used with great advantage. In cases of the former kind, from two-thirds of a grain to a grain of calomel combined with gr. ij. or gr. iij. of James's powder, may be given every six hours to a child two years old. If the case be of a graver kind, and bronchial breathing has become perceptible notwithstanding depletion and the administration of tartar emetic, the calomel must be given more frequently, as every four or three hours, combined with small doses of Dover's powder and tartar emetic, *if* the child be not so depressed as to render the use of the latter medicine inexpedient. Sometimes the combination of antimony with the mercurial is at first well borne, but afterwards it becomes expedient to discontinue it on account of the sickness that it sometimes produces, or on account of the debility of the patient. The diarrhœa which the calomel excites may usually be checked by increasing the dose of the Dover's powder. There are some troublesome cases, however, in which the stomach or bowels are so irritable that scarcely any medicine can be borne, and in them as well as in cases of neglected pneumonia in which the proper time for active treatment has been allowed to pass by and the child has become exhausted, while a large extent of lung is impervious to air, much benefit sometimes follows the persevering use of mercurial inunction. In infants and children under five years of age, the gums hardly ever become affected by mercury, even though most energetically employed, and it has never yet occurred to me to meet with an instance of profuse salivation, or dangerous ulceration of the gums. Such accidents, however, do now and then occur, and have been known to terminate in fatal gangrene of the cheek, or necrosis of the jaw. On this account, therefore, you must watch the condition of the gums in infants and children to whom you are administering mercury, just as you would do in the case of the adult, and diminish or discontinue the remedy on the first indication of their being affected.

No point in the management of the disease is more difficult than the seizing the exact moment when the employment of stimulants becomes necessary; and no general rule can be laid down for regulating their use. If, however, the patient were beginning to be much purged, if the respiration were growing more labored and irregular, though diminished in frequency, and if the pulse were becoming more frequent, and above all smaller and smaller, it is high time to resort to their use. Wine is as indispensible in such cases in the pneumonia of the child as in that of the adult, and it may be necessary to give it even to infants at the breast. Ammonia may also be advantageously administered in this stage of the disease, either in a mixture with the decoction of senega, or dissolved in milk, which conceals its disagreeable pungency better than any other vehicle. If diarrhœa do not exist, strong beef-tea or veal-broth is the best form in which nutriment can be given; but if the bowels be relaxed, arrow-root, or the *decoction blanche* of the French hospitals, should be substituted for it.

In conclusion, it may be well to offer a caution with reference to the employment of *blisters*,—a measure to which we often have recourse with advantage during the resolution of pneumonia in the adult, but which. as a general rule, is not advisable in young children whose lungs have been solidified by the disease.' Stimulating liniments may be employed with advantage: they produce very evident good, and are unattended by the risk that always accompanies making a breach of the surface in a young child exhausted by previous illness. The risk of such sores taking on an unhealthy character appears to be greater after inflammation of the lungs than after almost any other disease: and it may be added that the risk is still greater in those cases of secondary pneumonia that supervene on measles. *Med. Gaz., Dec.* 17, 1847, *p.* 1048.

44.—ON THE TREATMENT OF PLEURISY AND PNEUMONIA.—By G. J. Guthrie, Esq., F.R.S., &c.

[Speaking of the importance of bloodletting in pleurisy and pneumonia, Mr. Guthrie says:—]

I know no fact more important, and none which my experience has so amply confirmed, in opposition to the opinions commonly entertained on this subject. In young people, the bleeding should be repeated until the desired object is effected; and the quantity required to be drawn in inflammations, particularly after injuries, is often very great. It is almost a question, in some cases, whether the patient should be allowed to die of the disease, or from the loss of blood. Dr. Watson reports in his lecture "that the late Dr. Gregory, of Edinburgh, who had northern constitutions to deal with, was in the habit of saying, that, provided he was called early to a case of pneumonia, he would be contented to dispense with all other aids than those of a lancet and water-gruel." It was said that "he used to bleed to the verge of convulsions, but that his colleague, Dr. Rutherford, seldom went beyond three bleedings, and generally accomplished his object by two, judiciously timed and regulated. His patients recovered quickly: Dr. Gregory's very slowly." I have some doubts of the accuracy of this statement. Dr. Gregory, perhaps, saved the lives of persons who would have died under Dr. Rutherford; and their recovery was, of course, effected slowly. If it were otherwise, all that can be said is, that Dr. Gregory was a bad practitioner, who repeated his bleeding without paying attention to the presence or absence of those symptoms which rendered them necessary, or their repetition unadvisable. The aphorism of Laennec, on this point, should never be forgotten:—"Convalesence is rapid in proportion as the inflammation is of a small extent, and has been early subdued." As the first stage of pneumonia only lasts from twelve hours to three days before it passes into the second, and the second from one day to three before matter begins to be deposited, no time is to be lost to prevent these evils taking place, if the patient is to be saved without incurring a risk, from which few escape with health, even if life be ultimately saved. Bleeding in inflammation of the pleura, in young and healthy persons, should, therefore, be effected in a very determined manner, and with an unsparing hand, until an impression is made on the system—until the pain and the difficulty of breathing are removed—until the patient can draw a full breath, or faints; and the operation should be repeated, from time to time, every three or four hours, according to the intensity of the recurrence, or the persistence of the essential symptoms. The pulse does not often indicate the extent or severity of the inflammation, although it often expresses the amount of constitutional irritability of the person. It is sometimes exceedingly illusory as a guide, and is never to be depended upon in the earlier stages of disease, when accompanied by pain and great oppression of breathing. In the latter stages, the dicta of Laennec should be strictly attended to. He says:—"Whenever the pulsations of the heart are proportionally much stronger than those of the arteries, we may bleed without fear, and with the certainty of finding the pulse rise; but if the heart and pulse are both weak, the abstraction of blood will almost always occasion complete prostration of strength:" a remark of the greatest practical value, and one which should never be forgotten. In healthy young persons, in the acute stages of disease, a large and successful bloodletting is usually followed by an augmentation of the size of the pulse, and oftentimes by a diminution of its frequency.

In the year 1801, I found myself, not seventeen years of age, in charge of a regiment of infantry, on the top of the Berry Head, the outermost point of Torbay. The men were soon attacked by pneumonia. I had been taught the practice of physic in London—had followed among other avocations, the late Drs. Rowley and Hooper for three years, and, in consonance with their views, bled my patients three or four times in the first four-eight hours. I first drew sixteen ounces, then fourteen, then twelve, then abstracted, as the complaint continued, eight ounces; gave tartar emetic, so as to keep up nausea; then calomel, antimony, and opium, and lost my patients. True also to the precepts I had learned, I examined the bodies of them all, and found that they had lived to what is now called the third stage of pneumonia, combined in almost all with pleuritis, with effusion, and the formation of false membranes. The disease was essentially a pleuro-pneumonia, varying in different degrees, as the pleura or the lungs were principally affected. Discomfitted by my failures, I reconsidered every case, and saw that, however systematically I had acted, the disease had not been arrested in any one of them. In fact enough had not been done. Recollecting what I had been told of northern constitutions, and of country practice, I determined that in future they should die of the bleeding, and not from excess of inflammation. I then took away on each occasion, as much more blood; my sixteen ounces became from twenty to thirty. It would not do. I arrested the rapid course of the disease, but did not effectively subdue it.

It was evident that, to succeed, I must place no limit to the abstraction of blood in the first instance, but the decided incapability of bearing its further loss. The men were all young, and in high health; the winds were sharp and cold at night; and smuggled gin was cheap, strong, and plentiful. I, therefore, bled every man when he came into the hospital, until he fainted, and repeated it every four hours, or even oftener, as long as pain or difficulty of breathing remained; and they, sooner or later, all recovered. Every one, however, had taken alarm. Some said I had killed my patients with physic—others, that I was now bleeding them to death; and the officer commanding had determined on writing to London to ask for a better or more experienced doctor—as I afterwards learned—if another death was reported on the following morning. It did not occur, and I soon became in good repute.

[After bleeding, tartar emetic is the best remedy in pneumonia. It is to be given in doses of half a grain or a grain every two hours, or as it is tolerated, and may be increased to 12 or 20 grains a day with advantage. But when the pneumonia is from the first combined with irritation of the mucous membrane of the bowels, or abdominal tenderness, tartar emetic is of doubtful utility. In the stages of hepatization and infiltration, mercury comes to be of more value than antimony; as it is also in pleurisy. It must be given to affect the gums,—three grains of calomel, with a third or half a grain of opium, every second or third hour.* Blisters are not useful in the acute stage of inflammation of the chest. They are indicated, however, when the pulse is becoming weak and there is great dyspnœa; or when the disease is becoming chronic.] *Med. Times, Feb.* 19, 1848, *p.* 338.

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* [One-sixteenth of a grain every quarter of an hour will salivate easily in twenty-four hours. Ed.]

45.—ON ACUTE ŒDEMA OF THE LUNGS.—By Dr. C. West.

casionally happens that children are attacked with intense dyspnœa,
her symptoms of disorder of the respiratory organs, which terminate
y in death; while it is discovered, on an examination of the body, that
horacic viscera generally are free from disease, but that the cellular
of the lungs is loaded with serous fluid. This *œdema of the lungs*,
ver, though it sometimes destroys life very speedily, is seldom, if ever,
rely idiopathic affection, but occurs generally as one of the complica-
of that acute anasarca which not unfrequently succeeds to scarlatina,
even then is not of common occurrence.

If relief is not afforded the dyspnœa increases, and death may take place
ldenly within twenty-four hours: if, however, the approach of the disease
s been gradual, the dyspnœa increasing in paroxysms, death may not
sue for five or six days. As to the means to be used, Dr. West ob-
rves:—]

In the treatment of any case in which the symptoms just enumerated
ome on, free venesection affords most remarkable and almost immediate
elief, and whenever it is practicable is much to be preferred to the most
abundant depletion by means of leeches applied to the neighborhood of the heart. After depletion, large doses of tartar emetic should be given, since there is no other remedy that so speedily or effectually reduces the urgent dyspnœa. In the subsequent management of the case just such remedies are required as would be best calculated to relieve the general dropsy, and as that diminishes, the œdema of the lungs will likewise diminish and disappear.

Sometimes you may meet with cases in which the coldness of the extremities and the great lividity of the surface seem to forbid depletion. Such an instance I once saw:—the patient was a little girl about nine years old, in whom all the symptoms had come on very suddenly a few hours before I saw her, and who appeared almost dying at the time of my visit. I applied a large mustard-poultice over her chest, gave her a draught containing a large dose of nitrous ether, and repeated it every two hours. In the course of eight or ten hours, she was sufficiently rallied to bear venesection, which was followed by most marked amendment, and in a few days her recovery was complete. *Med. Gaz., Dec.* 31, 1847, *p.* 1132.

46.—CHLOROFORM IN SPASMODIC ASTHMA.—By B. Chandler, Esq.

[Mr. Chandler's patient, a lady fifty-six years of age, had been subject for twenty years to attacks of spasmodic asthma, for the relief of which "the resources of the Pharmacopœia had been exhausted in vain." On Dec. 6th, having had the prevailing influenza, she was attacked by her old complaint, extreme dyspnœa, with great sense of constriction, and acute darting pains through the chest and epigastric region. Mr. Chandler, resolving to try chloroform, says,—]

I accordingly poured half a drachm on a sponge, hollowed to fit the mouth and nostrils, and held it at first close to, but not touching the face. In less than half a minute she became excited, waving the arm about, and uttering incoherent expressions, accompanied with loud hysterical laughter: her prevailing idea seemed to be that she was "riding on a moonbeam." I then placed the sponge in contact with the face, when the limbs gradually relaxed, the arms dropping on the bed, quivering of the eye-lids and twitching of the muscles of the face took place, and she fell back on the pillow, drawing deep and prolonged inspirations, between each of which, perhaps, eight could be counted. I now withdrew the sponge, opening the curtains to admit air. Respiration gradually became more regular, and she lay without motion, the body well thrown back on the bed, not the slightest vestige of spasm remaining. This state continued until four o'clock, the patient apparently half sleeping, but conscious of what was passing in the room, when she sat up and took some food, describing her sensations as having been exceedingly pleasurable. Shortly afterwards she enjoyed a quiet sleep of some hours' duration, and the following morning she was quite quiet, no return of spasm, and no ill effect from the inhalation; she is now comparatively well. I tried the vapour of sulphuric ether in this case, some time ago, not only without success, but with much increase of the sufferings of the patient. *Med. Gaz., Dec.* 24, 1847, *p.* 1105.

47.—APHONIA CURED BY INHALATION OF BENZOIN FUMES.

[A lady, who had never been able to speak above a whisper for more than twelve years, the larynx at the same time appearing to be quite healthy, was advised to inhale the fumes of benzoin burnt upon a card. After a most persevering continuance of the remedy for nearly four months, she spoke in a good laryngeal tone, not sweet indeed, but tolerably strong.]

The fumigating cards are made in this manner :—A sheet of thick white blotting paper is brushed over with a saturated solution of nitre until it is thoroughly wet, and when dry the compound tincture of benzoin is applied in the same manner. Each of these applications is repeated more than once if necessary. When thoroughly dry the paper is cut into slips, three inches long, by one and a quarter wide. One of these being lighted at the corner, burns without flame like tinder, emitting a dense white smoke, consisting principally of benzoin acid and some particles of nitre, which are thrown off by the crepitation of the crystals. When used for remedial purposes, this smoke should be inhaled by holding the head over the burning card.

A young woman suffered from a common catarrhal sore throat, which lasted rather longer than usual. About a fortnight afterwards I was consulted, and found all the acute symptoms had subsided. She now merely experienced a defect in the power of speaking in a laryngeal voice, and all her words were uttered in a whisper. I recommended her every night inhaling the smoke of a fumigating paper. The very morning after the first time of doing so, a great improvement had taken place, whilst by a few days' continuance of the treatment, she was enabled to speak in a natural tone. *Prov. Med. and Surg. Journal, March* 22, 1848, *p.* 161.

ORGANS OF DIGESTION.

48.—ON DIPHTHERITE.—By Dr. COLEY, &c.

[Dr. Coley, at a meeting of the Westminster Medical Society, related the case of a child, a year and ten months old, in which inflammation of the fauces with effusion of false membrane followed the retrocession of measles. Nitric acid was applied to the parts, and shortly afterwards tracheotomy performed, and a grain of calomel ordered every two hours. On the fourth day afterwards, exhaustion coming on, the calomel was discontinued, and stimulants given; but the child died in about forty-eight hours. About twenty-four grains of calomel had been taken. Examination showed the entire absence of inflammation, but there was effusion into the pleura and pericardium: death was supposed to have taken place from exhaustion. In the discussion which followed Dr. Coley's account of the case,—]

Mr. Hird said that he had found great benefit in cases of low inflammation from the use of alkalies, as liquor potassæ; he approved of tracheotomy as superior to laryngotomy, and its performance by the knife rather than by a trocar.

Dr. Webster said that at the Congres Scientifiqne in Paris, this summer, M. Bretonneau spoke highly of the use of hydrochloric acid in this disease, also of alum applied locally. He recommended calomel, in the same way as it was exhibited by Dr. Coley.

Dr. Coley had performed tracheotomy several times in the country, but, from a prejudice against it, it had been postponed till a late period. He had found it very unsuccessful from previous extension of the disease to the lungs.

Dr. Murphy observed that these cases generally occurred in persons of very reduced constitutions, and asked what treatment would prevent it. He thought the operation increased the risk of the child. The case was of an erysipelatous nature, and he should suppose the treatment ought to be bark and wine.

Dr. Webster considered that calomel might be given in large doses in dry weather, but in warm weather, with a sonth-west wind, and the barometer low, the child would not bear so much.

Dr. Ayres considered that children bore large single doses of calomel well, but not repeated doses. Salivation diminished the amount of fibrine in the blood; hence, probably, its influence on these diseases.

Dr. Coley said that a second case of diphtherite occurred in the same family, which was cured by a smaller amount of calomel, about fourteen or fifteen grains, he supposed; this case was treated early in its course. In answer to a question, he said that he did not give tartar emetic, as the child was not equal to bear it.

Mr. Hird said, that diphtherite was epidemic at present. It was a disease allied to erysipelas. He objected to calomel, as not controlling disease of mucous membranes so much as those of other tissues.

[We are rather surprised that no mention is here made of the application of a strong solution of crystallized nitrate of silver (℈ij. to ℥i.) as recommended by Dr. Green, in Retrospect, Part XVI, p. 118, and which we have found both safe and efficacious.] *Lancet, Nov. 27, 1847, p. 476.*

49.—ON CHRONIC ENLARGEMENT OF THE TONSILS.—By Dr. Naudin.

Dr. Naudin, instead of producing a slow, progressive destruction of the tonsils, aims at their preservation, and for this purpose employs a solution of nitrate of silver, three grains to one ounce of water, increasing the strength by three grains up to two drachms of the nitrate, in the same quantity of water, and also applying the solid caustic to the surface of those hollows whtch usually exist in such tonsils, so that all parts may be equally affected. During one sitting the tonsils are painted twice or thrice; the mouth is then well washed with water. This cauterization must be repeated every two or three weeks until the tonsils are restored to their normal size, and then gradually discontinued; it produces no ill consequences, and even children speedily return to their play. Should the parts become accustomed to the caustic, it must either be discontinued for a time, or another substituted, as Lugol's diluted solution of iodine. In two cases related by our author, the nitrate alone was employed. Both, aged thirteen and fourteen, had been affected for years, and were cured in two and a half to three months; in a third case—that of a girl aged eleven—the disease was extensive and obstinate, requiring four months' use of the caustic, besides the use of hyd. pot. and iodine internally, and as an ointment. In all these cases no return has been observed after the lapse of years, and the previous disposition to inflammation of the tonsils has been extinguished.—*Edinburgh Monthly Journal.* *Lancet, Jan. 29, 1848, p. 127.*

50.—A NEW DIAGNOSTIC OF IMPAIRED DIGESTION.—By M. Bean, Physician to the Hotel Dieu.

[This consists in a transverse furrow across the thumb nails, resulting from a thinning in the substance of the nail. M. Bean attaches great importance to this sign, as determining, approximatively, the duration of the disease. For this purpose we are to measure the distance which separates the furrow from the root of the nail, remembering that the nail grows at the rate of one-millimetre (one twenty-sixth of an inch) in the course of a week.] *Lancet, Jan.* 15, 1848, *p.* 76.

51.—ON THE TREATMENT OF CHRONIC GASTRALGIA.—By M. Valleix.

[Chronic gastralgia, says M. Valleix, most frequently arises after acute diseases, from our keeping the patient too long upon low diet.]

In the treatment of chronic gastralgia, M. Valleix has derived the greatest benefit from the employment of *small doses of acetate of morphia.* The medicine is not a new one in this disease; but M. Valleix has advantageously modified the usual mode of its administration. Thus, instead of giving it before, he prescribes it immediately after a meal; and in this way he has relieved cases which had resisted all other treatment. A very well-marked one of this description is detailed. M. Valleix orders one grain of the acetate in thirty drachms of distilled water, and nine drachms of syrup, and directs a teaspoonful to be taken immediately after each meal. Under the use of these small doses, the bowels, so far from becoming constipated, are better regulated.—*Revue Medico-Chirurgicale*, tom. ii. p. 100; from the *Bulletin de Therapeutique.*

Brit. and Foreign Medico-Chirurg. Rev., April, 1848, *p.* 275.

52.—ON THE NATURE AND TREATMENT OF ASIATIC CHOLERA.—By Dr. C. W. Bell, K.L.S., Physician to the Manchester Infirmary; late Physician to H. M. Embassy in Persia.

[The following is Dr. Bell's opinion of the nature of cholera. He says:]

1st. With many able authors, I hold cholera to be merely a form of ague; and, in addition, I maintain its type to be quotidian. To determine the nature of ague, therefore, if this position be true, is to determine both the nature and treatment of cholera. To do this, it is necessary to have a clear conception of what is really essential in an ague. In the first place, I may venture to premise that I have enjoyed very ample opportunity of seeing ague in every variety of type and degree of severity; yet I have never seen a single attack of any kind of ague in which the whole cycle of its stages—that is, in which each individual paroxysm—was not completed within twenty-four hours. I have often witnessed several paroxysms completed within that time, but never one incomplete; and I have never met with a description of an ague in which the paroxysm exceeded twenty-four hours in duration, except where the author would appear to have considered Asiatic cholera to be such an ague.

2dly. The congestive or cold stage is the only essential which is never wanting in ague. It may be severe or slight, partial or general—be with or without shivering; but in ague, and every disease allied to it, such as masked and misplaced agues, as they are called, periodical headache, and neuralgia, and all the remittent fevers I have yet met with, this stage is never wanting, though sometimes obscure.

The second, or hot stage, may, or may not occur; reaction may, and often does, take place quietly, and without fever, and unsucceeded by a period of relaxation or sweating. This condition frequently occurs in what is called the fortnight ague—a form with which all who served in the late campaigns in Scinde are well acquainted, where the shivering is severe and hysterical, but where the febrile and sweating stages are often entirely wanting; and yet this is the form most remarkable in its periodicity, and in its return for one or more days, every fortnight, just previous to the lunar changes.

In other forms, more especially the quartan, all three stages generally prove exceedingly severe, and in this form the period of relaxation may perhaps pass the twenty-fourth hour from the accession, but I have not seen it do so, and I should be inclined to define ague as a paroxysm of congestion of the internal veins, subsiding within twenty-four hours, and often followed by febrile action and relaxation of the capillaries. It appears to consist in a gradual change in the action of the extreme capillaries, and apparent constriction of them, by which the blood is rapidly driven inward upon the great veins. When this has reached to such a point as to oppress the action of the heart, yawning first, and then shivering, or a sense of suffocation and pain in the præcordia, are the indications of oppressed circulation, and of the commencing effort of the heart to overcome the mass of blood which is stifling it. If, by the application of tourniquets to the limbs, or by bleeding, part of the blood which is rushing from the extremities to increase this congestion is prevented from reaching the great veins,—the heart excited to increased action, is enabled by this relief more quickly to overcome the obstruction and restore the balance of the circulation, and the paroxysm passes off. If not thus mechanically aided, the heart, after a severe struggle to maintain the circulation during the period of constriction, is at length relieved, by this nervous disturbance or spasm of the capillary circulation passing off of itself, and then the heart and arteries, so long excited by the struggle, maintain for a time their increased action after the obstruction in the capillaries is removed, and produce apparent febrile action. Presently this excitement subsides, the vessels become relaxed, and sweat succeeds. The vessels continue in this state for a longer or shorter period, according to circumstances, till they at length recover their ordinary tone and action in the intermission. This fever, however, is not fever properly so called, but reaction; and the sweating not critical or essential, but relaxation. The cold stage is alone essential, and is the physiological cause of the subsequent stages.

[Dr. Bell's opinion was formed from his experience of a series of epidemics which raged in Persia in 1842, when Dr. B. was attached to the embassy, and was in medical charge of the Persian army. He says:]

The first of these was dysentery; then a peculiar periodical disease, till then undescribed, attended with intense disturbance of the circulation of the nervous system; which also appears to have been observed at Strasburgh. Then came tropical remittent, then congestive ague: and this finally terminated in true cholera.

To this series of the diseases, I am indebted for being led—as I cannot but think I have been—by a species of natural analysis, and by easy transitions, to a clearer insight into the nature of the disease; and to a practice, unbiassed by a theory, and simply arising out of a process of accommodating my remedies to the changing type of disease: which then proved successful in every case I attended, where the feet had not already become warm, while the legs and body remained cold. This is a symptom which my whole experience teaches me to consider as a sign of actual death. In this, most authors of experience bear me out, and I have invariably found that every interference with the patient who presented this fatal symptom only increased the spasms and suffering, and hastened the consummation.

Almost every intelligent author on this subject, has classed cholera with the cold fit of ague—as, indeed, the whole of its features render nearly inevitable; and viewing it in this light, the rationale and use of bleeding, as recommended by Mr. Bell and other authors, could not be better laid down than it is in his work on Cholera Asphyxia. Yet among these authors I have searched in vain for a single statement that cholera is—what I am satisfied it will invariably be found to be—a congestive ague of quotidian type. All these works I have read consider it as, *in its whole course*, merely mucous membrane, where it finds a species of vent; for from this surface the repellant force squeezes out the fluid portion of the blood into the bowels, carrying with it the mucous epithelium, and constituting that serous or rice-water evacuation which is esteemed characteristic of cholera, but which has no title whatever to the name of secretion, or to be treated as such, being a mere exudation which is the very reverse of a vital action.

[These three then are obviously mechanical effects of the congestion, and manifest themselves in the form of symptoms, as:]

1st. Pain at the præcordia, sickness, oppression and struggling of the heart. 2nd. Cessation of the secretions of bile and urine. 3rd. Serous purging.

As all of these are the direct effect of too much blood being driven in upon the right side of the heart, it is not difficult to see that by diminishing the volume of this blood, their mechanical cause would be removed; and thus it is that the purging itself tends to relief, although less effectually than direct abstraction of blood, because only its fluid parts are thereby abstracted, leaving the bulk of it in a condition comparatively unfitted for circulation through its loss of serum.

But there are three things to be considered in attempting this mechanical relief by blood-letting:—First, how? second, when? and third, the ultimate effect on the disease?

The answer to the first of these questions is simple enough; it must be done, if possible, by direct diminution of the mass of blood that distends the cava. To do this, however, from the vessels most oppressed, is impracticable from their situation, and we are therefore forced to attempt to fulfil this object indirectly by opening a vein in one of the extremities which is yet sending its tide to augment this congestion: this indirect abstraction of blood acts not only by relieving congestion mechanically in the great veins, but the renewed motion of the blood excites the general circulation by continuous sympathy, and, what is of more importance, it would appear that the bleeding exerts a direct effect in relaxing the capillary spasm. Some, in ignorance of the object of bleeding in cholera and ague, have opened an artery, as if it were their intention to cut off, instead of promoting, the small current of life that still circulates, but doing so has invariably induced fatal collapse.

The second question, as to time, is not so easily disposed of.

It has been said, that whenever blood has been got to flow with tolerable freedom the patient is safe. This is certainly not literally the case either in congestive ague or in cholera. In the first two cases which I witnessed of the former disease, unaware of its nature, and believing that I was treating acute dysentery, I bled freely, but, as it afterwards appeared, I did so in the hot stage, in which it was my misfortune first to see my patients. The bleeding was followed in a few minutes by the most sudden and fatal collapse, with every symptom of cholera. The following day, with the abundance of similar cases which it brought, showed me my error, and then the lancet, fatal to the first two patients by being used at a wrong time, saved hundreds when used *at the very commencement of the period of congestion*: and I am happy to say that in many thousand similar cases no such accident happened to me afterwards.

[Dr. Bell tells us that the native Persian practitioners bled, but generally with a fatal result, because they bled when reaction was commencing; and he thinks that when bleeding was found to be unsuccessful by the medical officers of the East India Company, it was from the same cause. Dr. B. proceeds to say:]

When the exudation from the bowels or skin is yet flowing freely,—for in different forms of the epidemic either symptom may predominate,—and when the heart is heard to be struggling in an extraordinary state of excitement, and in the active endeavour to overcome obstruction it is *churning* as if it would burst,—a sound difficult to describe, but once heard, never to be forgotten,—when, I would say, the sound of the heart conveys to the listener the impression that it is labouring with unabated vigor of reaction, the lancet cannot be used too promptly; but when the attack has continued for four or five hours,—when the purging has become less copious,—and when instead of manifesting a continuous struggle, the heart appears only to be roused up to reaction at intervals, when the natural warmth of the skin is a little more extended on the neck and chest, and the patient though still tossing uneasily, is not now in his previous agony, I would hold my hand, and trust to medicine for some hours to come; I would then wait until I observed him rest a little more quietly, and bear the weight of the bed-clothes for a time, and until the heart's action continued comparatively tranquil for half an hour or an hour; then, indeed, on the very first symptom of renewed distress, or even sooner, I would bleed wtthout hesitation, till the thick tarry blood, that at the first is squeezed and kneaded from the arm with difficulty, flows freely from the orifice, and becomes changed to a florid hue.

[And in another place:]

All depends upon the period at which bleeding is resorted to. If early in the congestive stage, or just previous to its second accession, it is invariably successful; if just as the congestive stage is passing off, when the pulse begins to acquire a little power, it is invariably fatal.

[This fact Dr. Bell explains in the following manner. In the first stage the heart is excited to the utmost by distension of its cavities, from behind, and opposition to its action by spasm of the capillaries in front; bleeding gives relief from the pressure *à tergo*, and probably aids in relaxing the spasm, while at the same time by relieving the congested state of the great secreting organs, it enlists their sympathies in support of the vital actions; and the power of the heart being unimpaired, it can now carry on the circulation with vigour.. But in the second stage, the heart's energy is much exhausted, and its vital irritability impaired, by long-continued distension; and syncope and relapse will be the probable effects of bleeding. If then we cannot bleed, what are we to do? We must use those medicines which will invigorate and regulate the circulation generally, and control the tendency to periodical disturbance. Of these, *quinine* first suggests itself: it has been tried, and *failed*. Upon this subject, Dr. Bell says:]

I have found it fail in like manner when used alone in ague, but when combined with iron,* I have found it eminently curative in cholera; and although quite unable to explain the reason of this anomaly, I may, perhaps, be permitted to digress a little in order to illustrate the effect of this combination.

Much practice in the treatment of enlarged spleen, soon led me, contrary to what is advised in many English works of high authority, to regard calomel as an absolute poison in that disease, and the acquisition of Mr. Twining's valuable book on the Diseases of Bengal, informed me of the value of iron in its management. I found the routine treatment of the Calcutta Hospital advised by him, viz., purging with salts and sulphate of iron, combined with periodical bleeding, infinitely preferable to the French and American plan of giving large doses of quinine, but I do not think of combining the two methods, till it occurred to me to do so in the case of one of the gentleman of the Russian embassy, who was attacked by a much more severe form of ague than I had before met with in Persia.

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* It is very remarkable how much the general use of iron as a medicine has increased in this country since the last visitation of Cholera. I conceive that this arises from a greater than previous tendency to local congestions; early in the century acute inflammations were much more frequent than now, and many of the fevers yielded only to free bleeding; the lancet was constantly in the hand of the practioner; now its use in fever is almost obsolete.

Iron seems especially used for the purpose of facilitating the oxygenation of the blood, and enriching it as in chlorosis, and in aiding the action of a feeble heart, probably by its influence in causing the blood to pass more freely through the lungs, and thus diminishing the tendency to congestion. It is useful alike in menorrhagia and amenorrhœa, in congested kidney, spleen, and prostate, and in the most nervous diseases, arising from feeble and deranged circulation, &c. In fact, to combat the tendency to venous congestion, and as a corroborative and regulator of the circulation both general and local. It is the most direct opponent to mercury, the best cure for salivation, and certainly in my own experience in epidemic agues and remittents, including that known as gulf fever, (the terror of Europeans in the Persian gulf,) iron has proved as beneficial as I have invariably found calomel pernicious.

[Dr. B., then, gives quinine as an anti-periodic, and iron as an anti-congestive. He says,—]

My ordinary treatment in cases of cholera was a wine glassful of a mixture composed of—

℞. Quinæ. disulph. gr. xij. to ℈j.; ferri sulph. gr. ix.; acid. sulph. dilut. ♏xl., aquæ puræ, Oiss;

repeated from quarter of an hour to every hour, according to circumstances.

I believe this and other watery fluids to be much more rapidly absorbed during the intervals of exudation than is generally imagined. I have generally found the first dose or two put a stop to vomiting. In those attacks which I have ventured to class along with cholera, where the exudation from the skin or into the loose cellular tissue, took the place of that into the bowels, I added to the above mixture an ounce of Epsom salts, as a derivative.

With regard to diffusible stimulants, they are often successfully employed in the first moments of an attack, and immediately on the occurrence of the first purging, but not often after congestion is fully established; any one on listening to the heart in this stage, and hearing it labouring so vigourously, but in vain, against a force superior to its utmost power, will be convinced that it is impossible that increased stimulus can make it prevail.. My own experience is totally against their use, unless in combination with bleeding, or in the very outset. I have satisfied myself by experiment that in the congestive stage each dose is attended with instantaneous increase of the congestion and exudation; besides, it would seem only probable that to stimulate still further the already over-excited heart can only tend the sooner to exhaust it, unless at the same time mechanical relief to the congestion be afforded. In the third stage, or remission, stimulants will probably again prove beneficial; but I have not latterly used them, and would leave their employment to be regulated by circumstances.

[Dr. Bell thinks that *opium* is likely to prove injurious in the treatment of cholera by diminishing the sensibility (irritability ?) of the heart. He disapproves even of the ordinary use of *calomel* while cholera prevails, and still more of its employment in this disease itself. As to *applications* he prefers *cold*, having tried heat extensively without any good result: he says,—]

All the patient's desires are for cold, and considering spasm of the capillaries as the chief cause, cold applications ought to be a powerful means of removing this; but I have never had sufficient confidence to try the application of the wet sheet, having hitherto had reason to be satisfied with the practice I have already recommended; but many instances have come to my knowledge, where the application of cold water has been successful, without one equally convincing proof of the efficacy of the hot bath, or oven practice. I am well acquainted with three persons, who, after they had been laid out for dead, on being washed previous to interment in the open court-yard with water, to obtain which the ice had to be broken, recovered in consequence, and lived many years. I received last year from a friend in Persia, Lieut. Ferrier, a French officer, an account, which I think a little exaggerated, of his success in the treatment of cholera in Tehran, by keeping his patients immersed for several hours in a cold bath; and, only last week, I received from Erzeroon, in Turkey, a letter from our excellent consul, Mr. Brant, who states, that Dr. Dickson of that place was then curing more patients by frictions with snow and ice than by any other treatment.

The same practice is reported to have been the most effectual in Russia. I mention this not for the purpose of recommending it, but as the most recent intelligence, and in order that this, along with other methods, may be regarded in reference to the principle which I have been endeavouring to illustrate, that the cause is active,—that it is of temporary duration,—that it tends to recur, and that whatever the mode of treatment adopted, it must have reference to the cause of, the existence, and the effects of congestion, and to its remission and return. In conclusion, I would beg to state, that even should all that has been advanced be considered mere unfounded hypothesis, I would still venture on the ground of experience to beg the attention of practitioners to a consideration of the rules attempted to be deduced from it, viz:—

The use of quinine and iron in combination very frequently; abstinence from the use of the lancet, except in the very commencement, while the heart's power is evidently unsubdued, or after the patient has had an interval of repose—(not sleep, for that never occurs in cholera):—and except in those two periods rather to abstain from the use of stimulants, which are extremely painful to the patient.

After hours have elapsed, I consider the practitioner more fortunate who fails altogether to obtain blood than he who draws four or five ounces, and unable to get more, binds up the arm: the first patient may recover; the other, though apparently the most promising subject, seldom will. I have often known it occur that where every effort to obtain blood has failed, the same veins have bled freely after the exhibition of several doses of quinine and iron. At all times the use of the lancet requires the utmost determination; and when blood has once begun to trickle, no apparent cruelty must be shunned in order to get it to flow freely till its florid colour shows the circulation to have become fully re-established: for, if abandoned before this is effected, fatal collapse is almost certain to ensue.

[Upon another interesting point in the history of cholera, Dr. Bell observes,—]

The direct evidence in favour of non-contagion has always appeared to me infinitely to preponderate over that to the contrary; and I know none more conclusive than the fact of its penetrating the triple cordon sanitaire established by the Prussian Government on the Oder in 1831 at exactly the same rate (four German miles a day) that it proceeded at both before and after its encountering what was expected to prove so formidable a barrier to its progress. *Med. Gaz., Nov. 5, 1847, p. 797, & Jan. 7 & 14. 1848. pp. 8 & 52.*

[On this interesting subject we find recorded the opinions of several other gentlemen who have been placed in circumstances favourable to its study. Mr. THOM's remarks are founded upon observation of the cholera as it occurred in Her Majesty's 86th regiment, in June, 1846. Mr. Thom states his opinion that the existence of a hot atmosphere loaded with moisture, and at the same time in a *stagnant* state, is a cause of cholera, independent of any chemical change which may have occurred in the air itself. He then proceeds to say,—]

With an increase of temperature and moisture, there is also an augmentation of the bulk, and diminution of the specific gravity, of the air; so that a volume which fills the lungs contains a proportionately less quantity of oxygen than it otherwise would do This would be the case even in a dry hot air; and, in all probability, to this may be traced the origin of certain diseases peculiar to such a state—as the "apoplexy" of hot winds—and not to mere elevation of temperature acting on the skin. Now, the introduction of a large quantity of aqueous vapour, absolutely yielding no oxygen, into such an air, although it in some degree lowers the temperature, renders it even still more unfit for respiration, by its occupying a considerable proportion of each volume inhaled. From these phenomena, I calculate that, at the lowest rate, with the thermometer at 90, and dew-point at 83°, a given bulk of atmosphere contained one-eighth less oxygen during the month of June, than it did in January and February. In temperate regions, two pounds eight ounces of oxygen are daily consumed by the lungs: but, instead of this, only two pounds three ounces would have been inhaled at Kurrachee, even if the number of respirations per minute were as great in hot as in cold climates, which is not the case.

We also know that the soldier's ration is the same at all seasons, and he consumes as much animal food in summer as in winter—ay, in an Indian summer, or Canadian winter—and that animal diet requires more oxygen than vegetable, to render it fit for assimilation. In India, during the hot season, the just balance between these necessaries of life is lost, and a tendency to morbid change must always exist in a more or less degree, according to the intensity of the pre-disposing and exciting causes.

Changes in the Blood dependant on the Climate.—Yet we admit that this is not *alone* sufficient to produce those death-blasts which pass over India in certain seasons, but that it is merely the first link in the chain of causation. The result is a carbonaceous state of the blood, diminished formation of fibrine and albuminous matters: while the crude matters from which these necessary elements are formed, require unusual energy of the system to throw them off. The liver acquires increased action to remove the carbon; while the skin, in consequence of the renal secretion being diminished in hot climates, has not only to carry off the fluid, albuminous, and saline parts of the blood, but the nitrogenized matters also.

That such a condition of the blood existed at Kurrachee in June, was evident in every case where it was examined, whether in cholera or other cases: nor is this new or unexpected, although an important fact. In men, previously sound in health, the immediate evils arising from this are, no doubt, very frequently averted by the adaptation of our functions to relieve nature in many ways that must ever elude our scrutiny. But it must be pregnant with danger, while extraneous or trifling sources of irritation must tend to produce open disease: and the preservation of health under such circumstances must depend on an uninterrupted activity in the hepatic and cutaneous excretions.

Congestion, along with Deteriorated Blood.—Let us suppose any sudden or unusual congestion to take place in a system already impregnated with so much grave, although latent, germs of disease; I mean simple congestion, unconnected with any specific poison inhaled by the lungs or received by contact. It is almost needless to observe that such a phenomenon would lead to the most dangerous and fatal results—such, I firmly believe, as our regiment experienced. I am not prepared to say that the altered function of some organ may not produce a deceased secretion, which may act as a deadly poison by getting into the blood, and be the immediate cause of death; all I contend for is, that even this is but a consequence or part of the series of morbid actions merging into cholera.

Congestion Fostered by Moist Air.—The next point which forces itself on our notice is the presence and agency of phenomena during and preceding cholera, which were eminently favourable to a morbid congestion of the circulating mass, whether previously deteriorated or not: these I consider to be undue moistures in the air, and a deficiency of the ordinary currents of winds: both being equally unfavourable to the process of evaporation.

The Air.—At the time when cholera existed, the dew-point was from 82 to 83°; every cubic foot of air contained twelve grains of aqueous vapour; and, had the external temperature been the same, all evaporation must have ceased from the skin and lungs; but as the latter was at 96° in tents, this salutary process was not wholly arrested, although the quantity of vapour carried off from the skin must have been utterly disproportionate to the necessities of the system at such a time. At night, however, when the air fell to 85 or 86°—within two or three degrees of the point of deposition—this must have been almost entirely arrested, and no doubt was so under some circumstances. The cutaneous exhalents may even be in activity, and pour out their contents on the surface of the body; here, however, the perspired matter will remain, clogging the pores, congesting the extreme capillaries, and, with the body thus bathed in deteriorated fluid, the oxygen of the air is excluded from the skin, and the heat accumulates, which ought to be steadily removed by evaporation. The first stages of this state are rather active, but, if prolonged, passive congestion is the result, and a train of signs indicative of a cholera diathesis ensues.

Cutaneous Exhalation.—It is scarcely necessary to allude to the vital importance of evaporation from the skin, and escape of vapour from the lungs, or by the renal emunctories, in all climates and countries; and every one, without knowing why, can appreciate the exhilirating and elastic feeling caused by *dry* winds, and languor and depression induced by humid ones; and in no country is this more perceptible than in India, even when there is very high temperature. The quantity of liquids, in one form or another, which is introduced into the body in hot countries, exceeds that of cold ones by at least one-half, and in many individuals to double or treble the amount. The nature of things requires that it should be so; but it is equally important that this superabundant fluid should be carried off as quickly as possible, before it is replaced by a fresh supply of this necessary element, to become, in turn, the vehicle of extra heat and effete matters. I do not overrate the quantity of drink used by a soldier living in a tent at 90 or 96°, who consumes his ration of animal food and takes drams of arrack, in stating it to be at least ten pints in the day; whereas, during a calm, even if the body was without any covering, the air could only carry off from six to seven pints; and, the secretion from the kidneys being too insignificant to compensate for the loss of the cutaneous action, a portion of this must accumulate in the vascular system, and produce congestion; that, by daily increase, and by gradually disordering the functions, would create additional thirst, and add to the primary evils. It happens, however, that the body is more or less covered with clothing, and shut up in close tents or confined barracks at night, all tending to arrest the circulation of air and evaporation of the cutaneous exhalations during the night-time, when the thermometer falling from 90 to 86°, or within 3° of the dew point, would lessen the amount of fluid removed from the body to nearly three pints, or less than one-half. This is, in all probability, connected with the fact of many more men being attacked at night, or towards morning, than in the day time.

United action of Morbid Agencies.—If, then—with constitutions long exposed to a bad climate, enervated by high temperature, and the qualities of the blood gradually changed by a deficiency of oxygen in the atmosphere—bodies of men become exposed to another and equally influential morbific agency, humid air, such as we have essayed to explain, we must anticipate the occurrence of much mischief. Simple congestion, if general, in a hot season, is alone sufficient to endanger life; for every tissue becomes engorged, and every fuction disturbed or altered. The arterial, venous, and lymphatic vessels and capillaries all participate in the disorder; the respiratory process is enfeebled and slow; the heart is oppressed, and unequal to its load; the brain and nervous system become torpid; the chylopoietic viscera lose their tone; and the portal system being in a great measure removed from the general circulation, is affected by this universal obstruction in a very marked degree. The sudoriferous vessels on the surface are in an atonic state, and passively allow their contents to escape on the skin, which is so profusely bathed in moisture as to lead to the supposition that this secretion is increased, while in reality it is, comparatively speaking, diminished; but from the non-evaporating state of the air it is not imbibed, and leads to this mistaken idea.

Latent Condition of Cholera.—The state of the system referred to, as resultant on chemical change of the constituents of the air—in which carbon is accumulated in the blood, and fibrine and albumen diminished—will vary in degree according to idiosyncrasies, habits, and constitution, so that certain numbers of a community will be affected to an extent bordering on, or breaking out into, open disease. Noxious agencies, whether of atmospheric origin acting on the skin and lungs, or as poison introduced through the assimilating functions, when applied in a minute degree, but steadily kept up for a length of time, have a tendency to produce effects that are called accumulative. Their action is latent, but not the less certain, till all of a sudden it is developed as if the whole had been suddenly concentrated into one overwhelming dose.

Connection with Scurvy.—The scorbutic diathesis furnishes a forcible example of this; and sudden death is not only induced by slight causes of excitement, in men labouring under it, but even those who have exhibited no alarming signs have been equally affected. This is exceedingly applicable to cholera, between which and scurvy there is a great analogy in the state of the blood; and on the former subsiding, the latter appeared in our regiment, and also in other corps.

Sudden Climax to Accumulative Morbid Changes.—If, then, by a sudden increase of all the causes of this latent diathesis, a state of the weather, inducing universal congestion almost approaching to obstruction of the vascular system, occurs, can we be astonished that life will, in many, be abruptly cut short, as if some lethiferous draught were suddenly swallowed? Such, I am firmly persuaded, is the only rational way of accounting for those numerous cases of cholera which terminated fatally in a few hours; with few of those symptoms which nature usually exhibits in a salutary effort to remove local or general congestion. Sound blood might circulate slowly without destroying the nervous power; but, if it is deprived in a great measure of its vitality, it is quite impossible that it can be *delayed* in the brain without producing rapid dissolution. *Med. Times, March* 11, 1848, *p.* 388.

[On the treatment of this disease in the stage of collapse, we next give the opinion of Dr. WARD, whose conclusions are drawn from the investigation of numerous returns and reports made to government; and by this process he has been led to regard with more favour certain remedies which from his own experience he had considered even worse than useless. In a paper which he read before the Westminster Medical Society on this subject, Dr. Ward said,]

The idea of the nature of cholera that seemed most consistent with its symptoms and with the effects of treatment was, that it is the prolonged cold stages of a peculiar form of fever, presenting more analogies with continued than intermittent fever, the effect of a poisonous miasm, which, if very intense, destroys the patient, without the occurrence of any active symptoms, in a few hours; but in other cases induces a gradually increasing congestion of the venous system, which relieves itself by the effusion of serous fluid into the stomach and bowels, which is as speedily removed by the actions of vomiting and purging. The blood thus deprived of its serum, becomes thick and black, and is deprived of its vital properties to such a degree, that, unable to imbibe oxygen in the lungs, it ceases to stimulate the heart, which organ is thus unable to propel the blood through the extremities or through the lungs. This is the stage of collapse, in which the patient is blue, cold, pulseless, and voiceless, and his features are shrunk to such a degree that his dearest and nearest relatives do not recognise him; and this is the most fatal stage, and that least under the influence of remedies. Nevertheless, even under these deplorable circumstances we must not relax our exertions; and the list of curative means employed with success, prove that much may still be done for the relief of the patient. The most approved external remedies were, external heat, cold affusion, and counter-irritants. The author attempted to account for the favourable opinion of the application of cold in Persia, and heat in Russia and the rest of the northern countries. partly by the concordance of such ideas with the ordinary feelings of the inhabitants in such different climates, and partly by the notion that in Persia, where the thermometer is above 98° in the sun, the patients exhausted of their fluids by the disease, would be dried up and mummified by any attempt to keep up the temperature of the body by exposure to the sun's heat; whereas in Russia, &c., it was supposed, and probably with truth, that as cold is a direct sedative, its opposite, heat, was necessary to restore the vital powers.

All the reports concur in the efficacy of cold affusion in inducing reaction; and its success appears to have been in proportion to the violence of the shock. Counter-irritants were successful only in connection with other remedies; but they deserve attention from their stimulating power, and their readiness of application. Bloodletting was useful in every stage in relieving the congestion and rousing the heart by removing the load that oppressed it. In the state of complete collapse salt-and-mustard emetics, to excite the system, followed by bleeding. was a favorable mode of treatment. The internal remedies most to be relied on in the stage of collapse may be classed under the heads of revulsives, stimulants, and specifics. The first class, besides emetics of salt and mustard. comprised tartar emetic and croton oil, and calomel in large doses.. The effect of each was to check the vomiting and purging: but the three last were remarkable for their power of restoring the flow of bile, of a dark-green color, when tartrate of antimony or croton oil had been used; and like blue ointment, when the calomel had been given. The action of all three is supposed by the author to be irritating to the mucous membrane of the stomach and bowels, of which it stops the secretion by changing the action of the part The blood thus diverted from the membrane returns without loss into the portal system, and, by the secretion of fresh bile, the bile previously pent up in the gall-bladder is expelled, the spasm of the duct having been relaxed by the irritation of its orifice, produced by the tartrate of antimony, calomel, or croton oil. The blue color of the bile when calomel was used, may perhaps be explained by the decomposition of the salt by the alkali of the bile. From the number of returns in its favor, besides the extensive experience of the author in its use, he is disposed to place most reliance on the croton oil, as its action is simply irritant (many of the patients complaining that it made their throats sore when given in solution or suspension); whereas the tartar emetic is a direct sedative, and, hence, may be dangerous; and the author had given calomel most extensively in large doses without ever having seen such effects produced as those which he has mentioned above from the reports of others. Stimulants, after a fair trial. were almost universally condemned; and yet it is remarkable that M. Magendie had more success with his punch than any other of the Parisian physicians. His great rival, Broussais, was so unsuccessful, that he entirely relinquished his care of cholera patients at Val de Grace. Opium. either in small doses as a stimulant, or in large ones as a sedative, was equally unfit to be relied upon. The last class—specifics—comprises calomel, with or without opium, cold water, salines, and quinine, although the author never met with a single case of real cholera in which he could trace the recovery of the patient to the influence of calomel, nor ever observed that it produced any specific effect whatever; still, from the almost unanimous approval it has met with, and his own experience of its benefit in English cholera, he would strongly recommend it for future experiment, as being, at the least, perfectly harmless, though taken in enormous doses. He would also adopt the use of cold water *ad libitum*, upon the faith of the reports in its favor, though his own experience is decidedly opposed to it. Salines, on the other hand, when well diluted, have, besides a number of most favorable reports of their efficacy, this hypothesis in their support—viz., that they restore to the blood by their endosmosis through the coats of the vessels, if not by their being absorbed directly into the circulation, the saline matter removed by the serous evacuations; whereas, the water, if it be not rejected by vomiting, as in the author's experience, could scarcely be absorbed, the tendency of the venous system being to empty itself; nor, if it were absorbed, could it supply to the blood those saline elements of which it had been deprived. In the author's experience, the best mode, though a painful one, of arresting vomiting in all cases, is to keep the stomach empty; when, after a time, it will cease to suffer the action of vomiting, whatever that may be. From an attack of English cholera he suffered, and thus cured, the last efforts of which produced only bloody mucus, as well as from other similar results after emetics, the author believes that the stomach contracts itself during vomiting. Quinine, viewed in reference to the hypothesis of the intermittent nature of cholera, seems worthy of still further trial than it has yet experienced. In conclusion, the treatment recommended by the author in the stage of collapse would be the following, and much in the same order as the remedies are stated:—Cold affusions; hot air; external counter-irritation, and frictions; venesection; mustard-and-salt emetics; cold water *ad libitum*, or Dr. Stevens' salines; calomel, and tartrate of antimony, alternately in large doses; and, if all failed, croton oil.

Mr. French said, that in conducting the treatment of the collapse of cholera, before using indiscriminately the articles of the materia medica, we should study the curative process adopted by nature to this end. We readily enough admit that this kind of knowledge is absolutely necessary in conducting the treatment of mechanical injuries, and that surgery is only a successful art when this principle is borne in mind. The mode in which reaction is accomplished by nature from the state of collapse in cholera, is a process with which I am perfectly familiar, by direct observation, and it is very simple. It consists in absorption of water into the bloodvessels, and in vomiting. It may be confidently stated, that a patient who is no longer purged, and who is vomiting, is undergoing reaction in the most favorable way possible; just as "adhesion" constitutes the most favorable and rapid cure of certain wounds. But to state the method more fully, it may thus be expressed:

1st. Absorption of water into the bloodvessels; the patient's intense thirst inducing him to take this fluid freely.

2ndly. Nausea; which produces a general relaxation of the system, thus diminishing obstruction to the passage of the blood in the vessels.

3rdly. Vomiting; which mechanically assists in driving forward the blood in the congested vessels.

In the more intense states of collapse the process of reaction is not established before the vomiting has continued for three days. In slighter cases, collapse, reaction, and convalescence, may all occur in twenty-four hours. When, however, the disease pursues this course, cases which presented the most hopeless aspect may do perfectly well, either becoming directly convalescent, or if local congestions and inflammations ensue, they assume an active character, and are under the control of art, while if this process has been frustrated, they commonly pass into a state of congestive and typhoid fever, in which they either sink or recover with great difficulty. As to the essential nature of the disease, I believe it consists in a poisonous influence which is exerted directly on the heart, depressing its action; for these reasons:—

1st. The heart's action is always diminished in this disease. 2ndly. No essential lesion of any other vital organs really exists. 3rdly. All the other symptoms and physiological conditions admit of explanation on this hypothesis.

The first argument is admitted by all observers. It will be also admitted that the functions of the brain are remarkably well performed until the very period of death. Then, there is no asphyxia for these reasons—the mechanical apparatus is undisturbed. We are familiar with the symptom, "coldness of breath," (inconsistent with asphyzia); the recumbent position, so necessary to the cholera patient, would not be suitable for the state of asphyxia. Dr. Parkes, who has recently published a work replete with interesting facts on cholera, denies the paralytic condition of the heart, because the left ventricle was always empty: he also found that the lungs were extremely collapsed, and infers that the cause of the arrest of circulation must be sought for in the blood itself. The average duration of the disease, in the cases in which Dr. Parkes made post-mortem examinations, was ten hours; the observations were made sometimes a quarter of an hour after death; in all the cases the heart was found inirritable to the stimulus of the knife, while the muscles contracted under this stimulus. With the hope of learning something on these points, I destroyed a rabbit in two hours by repeated doses of infusion of digitalis; the animal became gradually too feeble to move, breathed quickly, and died: on opening the body, the heart was still feebly pulsating. The lungs were completely collapsed, and the left lung was so firmly contracted, that it sank in water; it readily admitted of inflation. The right side of the heart contained blood, and there was a very small clot in the left auricle; but the left ventricle was perfectly empty. The heart was quite as irritable to the galvanic stimulus as the muscles. From this experiment I infer, that the influence of cholera on the circulation is exerted in the same way as that of digitalis. With regard to the condition of the blood in cholera, I believe it to be the best under the peculiar physiological condition of the patient. Blood in the normal state is intended to be constantly circulated with a regulated amount of force. If this force be exceeded, we find that the fluidity of the blood is increased, that it acquires a brighter hue, and that it possesses the power of coagulating more firmly when stagnant. The converse of all this obtains with diminished force of circulation. To this alteration in the constituents of the blood is possibly owing the absence of fibrinous deposits in the heart or the vessels; the retention of its homogenons condition, and its adaptation for the re-admixture with water during reaction, so soon as the baneful effects of the poison shall cease to be exerted in the system. Thus to sum up:—In proportion to the force with which the circulation is controlled, either death results, or the blood is diminished in quantity, and altered in quality, by a secretion from the alimentary canal—the overwhelming effects of sudden congestion and fibrinous deposits being probably thus prevented.

[Dr. King, who had the charge of a large district during the prevalence of cholera, stated that after he had tried many modes of treatment for the stage of collapse, as Stevens' salines, calomel and opium, stimulants, &c., and found them equally unsuccessful, he adopted Mr. French's plan, placing a pail of cold water by the bed-side, and letting the patient drink *ad libitum*: at the same time he gave large doses of calomel, and when vomiting or hiccup came on, the patient generally did well.]

Med. Gaz., *Dec.* 17, 1847, *p.* 1074.

[Dr. Massy's experience of cholera was gained during an epidemic which attacked Umballa, a large, dirty, and densely populated Indian city, in the year 1845:—an epidemic which ravaged Cabul, Affghanistan, and the Punjaub. Dr. Massy discriminated three forms of the disease. The first began by vomiting and purging of a greenish and brownish fluid, like the sporadic bilious cholera; but in a couple of hours the colour of the fluid changed, becoming whitish, and at the same time thinner and more copious. The administration of acetate of lead and opium in pills, opiate injections, or chalk mixture with opium and aromatic confection prevented the disease progressing. Further, Dr. Massy says:]

The best means of allaying the vomiting is by giving effervescing draughts with tincture of opium. Keep the patient warm and in bed, and the next day, give a large emollient purgative injection; but if you do not check this disease in the beginning, you may depend upon its assuming the severe characters in a few hours, when you will have to resort to the more active means, which I will mention just now. The next form of the disease is that which I propose denominating the second species; it begins by purging and vomiting of whitish fluid, or mixed with green; the patient feels weak even in the commencement; the skin at first is warm, but very soon the temperature wonderfully decreases; the pulse, at first quick and small, like the heat of skin, soon sinks below the natural standard; the tongue is white and dry; the patient asks for a drink, and in a second or two more begs for another.

You will also at this time perceive a change in the voice; I have frequently seen this one of the earliest symptoms. The symptoms increase if not checked by medicine; cramps of the most violent description come on, chiefly in the feet, calves of the legs, thighs, and hands, which cause such excruciating torture, that I have rarely met even the most resolute able to resist screeching out. The skin now becomes quite cold, assumes generally the blueish hue so remarkable in cholera, and in a short time you will find it corrugated in almost every part, reminding one exactly of a woman's hand after washing for several hours. You will also be struck by the very peculiar countenance of the patient; the features are all sharpened; the eyes sunk in the orbits, but starting wildly; the tongue, if you place your finger on it, will be found quite cold: the patient's breath, if he breathes on your hand, is also cold. I shall never forget the first time a man in the advanced stage of cholera breathed on my hand—it actually made me start, it was so much colder than the atmosphere; all this time the patient screams out for cold water to drink; if you ask him is he cold, he says no, he is burning hot, he wants something cold to drink. I never actually tested how much a man in this state would drink, but fancy it would be something enormous, for he generally throws it up as fast as he drinks it;—sometimes, one would fancy, by a spasm of the œsophagus, for it has hardly time to reach the stomach, and still while he is vomiting he stretches out his livid hands, crying more, more! It is a remarkable feature in cholera that a patient very seldom makes water during the existence of the disease; indeed I cannot call to mind having seen more than three or four instances of patients voiding urine in true Asiatic cholera: this was so remarkable at Umballa, that when a man did so his friends used to cheer him by telling him he was recovering; yet many of the other secretions exist. The skin secretes perspiration, the mucous membrane mucus, and the salivary glands saliva; for frequently have I seen a patient in the last stage of cholera, when his strength was completely exhausted, spit nearly across the room, and in the same way eject water while drinking. The change in the countenance is most wonderful in so short a time; men whom I have known intimately I have been unable to recognize. Restlessness is a very marked feature, it is almost the only sign of raving I have usually remarked; a patient will tell all about his symptoms, how he was attacked, talk of his will and all of his affairs in a most rational manner, yet he will constantly try, while no one is watching, to get out of bed, to turn from one side to the other, kick off the bed-clothes, and rail at everything; this species of case, if it ends fatally, generally does so in one or two ways—either the purging, and occasionally the vomiting, continue almost to the end, or else both cease, and the patient dies laboring under the symptoms of effusion on the brain; the pupils are dilated and fixed, it is impossible to rouse him, and his breathing is stertorous. The treatment of this case depends in the first instance on bleeding, and largely, if the patient's pulse is good, giving at the same time twenty grains of calomel with one of opium. This, I think, will be found the best practice, at least we found it so in the hospital of the 31st Regt. Often have I seen the purging and vomiting cease almost instantaneously. The calomel and opium in the first place act as an immediate sedative, and the bleeding relieves the circulation more than purging, removing a mass of blood instead of depriving it of its fluid part. After twenty minutes give ten grains more of calomel and half a grain of opium:

this will further prolong the cessation of the symptoms, and in about an hour you will find the calomel acting freely on the liver. when quantities of bile will be passed by stool. When it has acted in this way for some time you may give opium, but not till then: of the various species of practice I have seen tried, I think a reliance on opium in this form of cholera the most faulty: you may exhibit any amount of opium, while a man is purging and vomiting white fluid, without producing a single sign that the medicine has been swallowed,—the purging and vomiting still continue. If you happen not to see your patient (as is too often the case among soldiers) until the disease is farther advanced,—until his voice is changed, pulse a good deal reduced in strength and frequency, feature sunken, temperature reduced, skin blueish, tongue cool, &c.—I would recommend the bleeding to be smaller. You may be able to repeat it; but, as you draw blood, stimulate, give punch. brandy, or wine and water, or carbonate of ammonia. Apply friction, with stimulating and hot liniments to the extremities, warm sand-bags to the feet, sinapisms to the calves of the legs and pit of stomach; for if once you can raise the pulse, the chances in favor of recovery will be vastly increased. I have seen more than one case where the pulse improved after this treatment and again fell away, when it was deemed advisable to take blood a second time with decided advantage, stimulating at the same time.

Cases of this kind cannot endure the loss of blood, even in small quantities, without stimulants. This we learned by sad experience at Umballa; most of the cases we bled in this sunk without a rally. We were about to condemn bleeding in cholera, when once the symptoms of collapse set in, but we tried stimulants together with the bleeding, and found the practice the most successful of all we adopted. When the pulse and temperature of the body improved, and the purging was checked, we were in the habit of giving calomel and opium, as above; by this promoting the secretions, and, after they were fully established, checking them by opium, &c. Many are advocates for injections; but I always found, while purging existed, stimulating injections increased it, still draining the blood of its fluid parts, augmenting the disease. Every one has remarked the thick dark blood that flows from venesection in this stage of cholera; it hardly coagulates, and is devoid of serum; for though in the worst cases, where neither purging nor vomiting exists, the blood is found thick and dark, still it stands to reason that, where they are present, the great quantity of fluid ejected must be eliminated from the blood, thereby increasing the tendency to this thickened condition.

It is recommended by many to allow the patient to drink largely of water, for the purpose of its supplying this deficiency. I have likewise given alkaline mixtures largely, both by mouth and injection, warm and cold but never could perceive the least advantage result from either practice. When the cramps are distressing, I have seen anodynes and anti-spasmodics exhibited; but the best means of allaying them is by continued friction with stimulating liniments. I have also administered tonics, quinine, &c.; but in this disease, as I have seen it in India, the practice was not successful.

The next, which I propose as the third form of the disease, is one I have met, though not near so frequently as the last: it is that in which the patient is brought into hospital in a state of collapse; and, if you inquire, you will find that he has hardly been purged at all, probably not vomited either; his features shrunk; eyes sunk in the head: skin, all over the body, corrugated; body quite blue; he has no cramps; tongue, skin, breath—all as cold as death; pulse not to be felt. He has no energy; asks merely for a drink of cold water: complains of burning heat at the epigastrium. This is the most fatal of all; but, thank goodness, it is not a common form of the disease, though the other species often terminate in this way.

All means of treatment that I have seen in this stage have been most unsuccessful, though I have tried nearly every remedy I ever heard of. If you open a vein, no blood flows, except a few drops, thick, dark and semifluid. The only means you can use are, turpentine injections, mustard emetics; afterwards stimulants by the mouth. hot baths, sinapisms to the legs and epigastrium; blisters to the nape of the neck. Continued friction with turpentine warm; for you will find that the skin is hardly affected by blisters. In this stage, hot turpentine rubbed along the spine is not a bad means of stimulating. I have seen cold affusion practised in this and the former stage of the disease; and though I have heard some men of experience in India (whose opinion cannot be held lightly) recommend this mode of treatment as a stimulant to the circulation, I am sorry to say, in the cases tried on the thirty-first, it was not deemed a favourable mode of practice.

I recollect almost the last case of this sort I saw in India was that of one of the paymaster's clerks. I tried to bleed him from the arm, but no blood would flow. I then opened the anterior branch of the temporal artery; the blood flowed at first slowly in a small stream, as if coming from a vein, not *per saltem*. In a few minutes, however, it came in a stronger stream; the pulse at the wrist was soon perceptible, and the man finally recovered without a bad symptom. The change in the pulse, and the sudden improvement in this case, was the most remarkable I ever saw. Had I not frequently tried the same means unsuccessfully before, I should have vaunted this as a specific. I suspect it is from similar origins the different specifics for cholera have arisen. I think the treatment I propose will be found the most successful I know it was the plan adopted by many medical men at Umballa during this epidemic, always bearing in mind that if the collapse is great you must stimulate while bleeding.

I have but one other subject connected with cholera to remark on, namely, the supposition of infection or contagion, neither of which, I am satisfied, exist. There were four medical officers in the 31st at this time, a number of apothecaries and apprentices, besides a great many servants connected with the hospital in constant attendance on the sick. I have, together with the other medical officers, spent hours by night and day in the cholera ward, and out of twelve or fourteen Europeans and some forty natives, none had a symptom of the disease. I think one of the strongest arguments that can be adduced in favour of non contagion, is the fact that the natives in India, who have more opportunities than any other persons of forming a correct opinion, believe not in it, and if they had a shadow of belief, the Bengal coolies, who are proverbially the greatest cowards in existence, would not sit as they do quite unconcernedly alongside of a dying man. Many times have I been obliged to kick the coolies, as, with their chudders wrapped around them, they have fallen to sleep while rubbing a man suffering from cramps, with their heads against the bed upon which the patient was lying. I have seen two epidemics of cholera in India, besides many sporadic cases, and never knew an instance where contagion for a moment could be substantiated. *Med. Gaz., Jan* 28, 1848, *p* 144.

[The following is Mr. McCoy's summary of his experience on the subject:—]

1st. That stimulants given internally, in any stage or form of malignant cholera, of whatever they may consist, or in what doses exhibited, are decidedly injurious. 2d. That external stimulants, as frictions with mustard, &c., to the patient's limbs, are of no use whatever. 3d. That attempts to raise the temperature of the body by artificial heat are always useless, greatly distress the patient, and, I am disposed to think, sometimes do harm even. 4th. That cold drinks, and cold water particularly, are the most useful, and by far the most agreeable that can be given. 5th. That calomel has been, by far, the best medicine I have used, or seen others use, and that I have never seen injury from its exhibition, in any quantity, in cholera. 6th. That the first appearance of bile in ejections from the stomach or bowels is evidence of recovery. 7th. That consecutive fever, or local inflammation, is no part of cholera. *Dub. Med. Press, March* 1, 1848, *p.* 140.

[In his Lectures on the Practice of Medicine, Dr. WATSON, when speaking of the various plans of treatment adopted in Asiatic Cholera, observes,]

But when the regular symptoms peculiar to the severe form of cholera had set in, medicine, I repeat, had very little influence upon it: and accordingly, as might have been expected, a hundred different cures of the disease were announced, most of them all but infallible. Some persons held that timely bleeding would save the patient; others relied confidently upon mustard emetics. Hot air baths were manufactured, and sold to a great extent, to meet the apprehended attack in that manner without delay. Certain practitioners maintained that the disease was to be remedied by introducing into the system a large quantity of neutral salts, which were to liquefy and redden the blood, and to restore the functions of the circulation. But of this practice it was said in a sorry but true jest, that however it might be with pigs or herrings, *salting* a patient in cholera was not always the same thing as *curing* him. In a great number of patients the blood was mechanically diluted by pouring warm water, or salt and water, into their veins. Some physicians put their trust in brandy, some in opium, some in cajeput oil, which rose to I know not what price in the market; some, again, in calomel alone. *Med. Gaz., April* 7, 1848, *p.* 584.

[DR. TURNBULL, after referring to the impracticability of raising the diminished temperature of the body in cholera patients by ordinary means, says,]

My plan of treatment consists in endeavoring, by means which can be repeatedly applied without excoriation of the skin, to re-excite an action of heat on the surface of the body, and thereby to restore the lost balance of circulation and nervous energy. For this purpose I employ an extract made of capsicum, with alcohol, reduced to the consistence of jelly. Three drachms of the extract to be well mixed with six drachms of purified lard; the patient to be well rubbed over the abdomen, heart, and calves of the legs, several times a day; and at all times if there be any coldness over the surface of the body, or when spasm takes place in the abdomen or calves of the legs. The rubbing ought to be continued until such time as the patient expresses that the heat is intolerable. Another form of the employment of capsicum is the following embrocation:—Concentrated tincture of capsicum; viz., capsicum pods, four ounces; rectified spirit, twelve ounces; macerate for a week, and strain. To increase its energy upon the nervous system, when required, I add two or four grains of delphinia, or veratria, to the tincture. Another method of obtaining the advantages of capsicum, speedily, and without much expense,—and which may be considered a household recipe for cholera until medical assistance can be obtained, is to boil four ounces of capsicum in a pint of olive oil, for six hours, and strain. To free the capsicum from the chloride of sodium with which it is generally united, it is necessary to add water, and strain, previously to mixing it with oil, otherwise it will produce vesication. The chloride of sodium is the chief, if not the only, material whereby vesication is produced when capsicum is used externally.

The advantages that the capsicum possesses over many other stimulants is, that it produces no vesication, and therefore can be repeated very often. Another advantage is its very permanent and certain effects; and there is no part to which it may not be applied without injury. The capsicum will be found a most powerful rubefacient; it assists in restoring heat and circulation to the surface, while the delphinia and veratria united with the capsicum restore the lost nervous energy. This plan of treatment can be pursued without much disturbance to the patient, the movement of whom is attended with the worst consequences. I have often used the different preparations of capsicum with or without veratria and delphinia, in congestive fevers, with very good effect, and also in cases of cramp or spasm. This stimulative plan does not interfere with the administration of other medicines, but on the contrary, greatly assists in restoring the lost power of the nervous energy and equalizing the balance of circulation. *Lancet, Jan.* 29, 1848, *p.* 119.

trived for the purpose, taking care that the patient does not attempt to walk without this protective appendage. Radical cure can only be effected by the performance of an operation for the complete removal of the loose cartilage by actual incision; this is a somewhat formidable operation, and the patient should be well prepared for it by previous constitutional treatment, so that he may be the less liable to the accession of subsequent inflammation.

In performing the operation, the surgeon should press the loose cartilage to the outer side of the joint between the patella and external condyle; it should be firmly confined to that situation by means of a ring, such as the bow of a large key, which when pressed upon the part will prevent its slipping away again into the joint. The skin over the cartilage must be drawn downwards as far as its elasticity will permit, and held in that manner while a firm incision is made through all the integuments at once upon the cartilage, which is generally forced out by the tension of the neighbouring parts. The skin previously drawn downwards may now be released, and when it has returned to its natural position, the incision through it will be found to be no longer in apposition with that in the synovial membrane, and the subsequent escape of synovia, and atmospheric influence on the wound in the synovial capsule, completely prevented. Over the external incision white of egg may be applied, and a strip of adhesive plaster above that. I recommend the albumen, as it causes no irritation, and also prevents the stimulating effects of the resinous plaister. A splint should be applied behind the joint, so as to insure the most perfect state of rest; evaporating lotions may also be employed, and constant watch kept for the slightest symptom of inflammation, in order that it may be combated at the first moment of its appearance. In spite of every precaution, however, violent inflammation frequently follows the operation I have just described, leading to extensive suppuration in and about the joint, the consequence being, the loss either of the limb or life of the patient. In the course of my practice, I have performed the operation for extirpation of loose cartilage three times: in the first with perfect success, not one untoward circumstance occurring: in the second, violent inflammation followed the operation, and anchylosed joint was the result. In the third case, suppuration supervened, and the constitution of the patient became so much affected as to render amputation inadmissible, and he sunk, after protracted suffering, the victim of hectic fever. Another method of operating for the removal of loose cartilage has been proposed within the last few years, and I consider the mode of procedure much safer than that adopted under the old plan.

A narrow-pointed bistoury is inserted in the skin at some distance from the loose cartilage, and pressed onwards until it reaches the point at which that body is situated. The cutting side of the knife is then turned towards the joint, and the synovial membrane divided to a sufficient extent to admit of the loose cartilage being forced out into the subcutaneous cellular tissue, where it is allowed to remain until the wound in the joint is healed; it may then be removed by a mere incision through the skin. The same prophylactic treatment must be resorted to in this as in the other description of operation, and also similar means of subduing inflammation, if it should already have commenced. *Med. Gaz., March* 17, 1848, *p.* 441.

71.—ON THE TREATMENT OF CHRONIC ARTHRITIS.—By MM. Guerard and Briquet.

At the Hotel Dieu and La Charité hospitals in Paris, MM. Guerard and Briquet employ in chronic arthritis following acute rheumatism, or any other cause, an ointment containing nitrate of silver.

At the Hotel Dieu, five parts of the nitrate are rubbed down with thirty-two parts of lard. The articulation is well rubbed with it once a-day, and a poultice is then applied over it, to favour absorption. This treatment is continued until the disappearance of pain. The epidermis becomes shining, yellowish, or almost bronzed, and sometimes blackened, for some days. At La Charité the ointment is not so strong, and is composed of only one part of the salt to thirty-two of lard; but the good results are not so well marked. A similar treatment is at present followed by M. Jobert at St. Louis, in cases of white swelling.—*Annales de Thérapeutique*. Oct. 1847.

Monthly Jour., Dec. 1847, *p.* 438.

72.—ON GONORRHŒAL SYNOVITIS.—By Bransby Cooper, Esq., F.R.S.

Patients suffering from gonorrhœa are subject to the attacks of a peculiar form of synovitis, which so closely resembles the rheumatic affection, that it is sometimes extremely difficult to distinguish between them; and indeed it is only from a history of the case that a just diagnosis can be formed. It usually happens in such cases that the gonorrhœal discharge ceases simultaneously with the accession of the disease to the joint; and it is of the highest importance that the former should be re-established as quickly as possible, the best means being the application of warm fomentions over the organs of generation. I have never known an attack of the above kind to occur unless the patient has taken copaiva, and am inclined to think that this medicine acts specifically on the synovial membranes; for I have invariably found the symptoms of inflammation greatly aggravated by its administration. Bark and alkalies, combined with opium, seem to be the most appropriate remedies, as colchicum does not afford relief. In these cases the latter circumstance constitutes a further distinction between gonorrhœal and rheumatic affections.

Med. Gaz., *March* 17, 1818, *p.* 440.

73.—ON THE DIAGNOSIS OF INFLAMED LIGAMENTS.—By Bransby Cooper, Esq.

If inflammation of ligament be primary, it may generally be diagnosed by the slight degree of swelling which occurs at the joint, and by the absence of acute pain while the patient is standing on the diseased limb in the erect posture. The least attempt at motion is, however, productive of severe suffering, and this constitutes an important distinction between disease of ligament, and that of synovial membrane or cartilage; as in the latter case, the most painful position is when standing upright, with the weight of the body pressing on the affected articulation.

Med. Gaz., *March* 31, 1848, *p.* 529.

74.—ON THE TREATMENT OF GANGLION.—By Bransby Cooper, Esq., F.R.S.

[After alluding to the usual plan of giving a ganglion a sharp blow with the back of a book, and to the fact that the walls of the cyst are sometimes too dense to be ruptured without employing a dangerous degree of force, Mr. Cooper says,]

I think it a better plan to pass a couching needle beneath the skin, introducing it at some distance from the ganglion, and, after puncturing the sac in several places, to squeeze the synovial fluid into the cellular tissue: pressure must be applied to the part, and a splint then adjusted, to insure perfect quiesence of the wrist-joint. The smaller description of ganglia which sometimes occur on the palmar surface of the hand, at the extremity of the metacarpal bone. cannot be subjected to similar treatment to that just detailed, but must be punctured directly; the small quantity of synovia they contain being expressed from the opening.

In certain situations in the body it is extremely difficult to form a diag-

53.—ON FLATULENCE.—By Dr. Robert Dick.

Flatulence of the stomach and bowels has two principal sources—the liquid and solid alimentary ingesta, and (as some assert) exhalation from the mucous membrane. We must frankly own that we have yet met with no grounds other than conjectural for the latter view; we are aware of no *facts* that prove it. True, indeed, John Hunter—an authority not lightly to be questioned—suppposed exhalation from the mucous surface to be an occasional source of gaseous distention; still we must repeat our opinion, that the alleged fact rests on no *positive* evidence: while there are not a few strong presumptions against it, into the consideration of which, however, it would not be expedient to enter now. Suffice it only here to observe, that if the rapid metorismi or pneumatosis which arise in the last stages of adynamic fevers, &c., seem to prove the fact of the sudden secretion of gases by the mucous membrane, is it not just as likely, we would ask, that the phenomena named are due to the suspension of secretion and nervous action in the stomach and bowels, and the opportunity thence afforded for the play of the ordinary chemical affinities in the aliment or *excretions* in the stomach and intestines—nay, perhaps, to some morbid secretions, the consequence of depressed or dormant vital power, and which actually favour the occurrence of ordinary chemical action in the contents of the bowels, and the thence resulting extrication of gases? This, at least, is a more *probable* supposition than the other.

On the same principle, I would account for the air eructated in gastritis, hepatitis, &c. The vital and conservative power of the mucous membrane being in these cases greatly reduced, while, at the same time, the temperature of the stomach is greatly augmented, the play of *non*-vital chemical affinities is favoured—the stomach's own *infra*-natural secretions become the ready subject of these. A third source of gaseous fluid in the stomach and intestines may be named, though we consider it as of little importance—namely, the atmospheric air swallowed in the acts of mastication and deglutition, and mechanically contained in the articles eaten, as, for example, in the pores of bread, &c.

The gases of the stomach are principally nitrogen, oxygen, and carbonic acid, nearly in the proportions of atmospheric air. The gases of the intestines are those now named, and, in addition, carburetted hydrogen, hydrogen, and occasionally sulphuretted hydrogen. The intestinal gases are further often loaded with vaporous particles of the fœtid contents of the bowels.

Flatulence, as we have formerly remarked, is often owing to an inefficient action of the liver, and a deficiency of bile in the intestines. Whatever promotes the hepatic secretion tends to remove flatulence of this origin; hence a few drops of colchicum wine are often effectual. Still more sure are minute doses of mercury. An ante-dinner and an evening pill, consisting of a grain of the blue pill and three of extract of rhubarb, acts with wonderful good effect in many cases of this kind, in which, along with flatulence, there are slight constipation, yellow-furred tongue, ill-tasted mouth, &c. As in gastro-duodenitis, there is often, from the vascular tumescence of the duodenal mucous membrane, a constriction, and sometimes complete temporary occlusion of the mouth of the ductus communis choledochus, with, of course, interruption to the discharge of bile; hence, in part, the flatulent eructations, &c., which accompany gastro-duodenitis. It is far from unlikely that the pancreatic duct and secretion are often affected in a similar way; but for some unaccountable reason, it has not pleased pathologists of any age to pay much attention to this unobtrusive viscus—some seeming even to think that it, as well as the spleen and supra-renal capsules, are not necessary, because not understood.

Treatment.—When the tongue is pale, when there is no tenderness on pressure at the epigastrium, or in the right hypochondrium, when there is no thirst, no dry heat of skin, and no quickness of pulse, flatulence requires carminatives, bitters, and even stimulants. Thus the patient may be directed to use freely any of the following waters:—cinnamon, fennel, cassia, pimento, peppermint, pennyroyal, mint, Cologne, lavender, caraway, aniseed, dill, balm; to these, some of the respective tinctures may be added. With the carminative waters just named, one or more of the following bitters may be given—camomile, quassia, columba, absinthium, rhubarb, to which may be added valerian, castoreum, and camphor. As an expellent of flatus existing in the bowels, assafœtida, or oil of turpentine, the former given by the mouth, or in injection, the latter in injection, are superior to all things else, excepting, perhaps, the infusion and spirit of armoracia.

Secondly. If flatulence is accompanied with a dry and preternaturally red tongue and fauces, with thirst, heat of skin, tenderness of epigastrium, scanty and high coloured urine, heartburn, &c.—in short, with symptoms of inflammatory irritation of the gastro-duodenal mucous membrane, then alteratives are clearly indicated, or rather such substances as promote the secretions of the mucous membrane; these are ipecacuan, sulphur, potassio-tartrate of antimony, the various preparations of mercury, magnesia, iodine, nitrate of silver. These we would be disposed to give a trial to successively, almost in the order in which we have named them. But a great variety of other means may be tried, and among these the following, in those cases in which flatulence is accompanied with obvious torpor and fulness of the liver, as well as with gastric irritation. The wine of colchicum, for example, may be given with a few grains of the sulphate of potass, or if there are acid eructations and heartburn, with carbonate of magnesia; the infusion or tincture of arnica may be given in the same combinations, and so may the powder and extract of cusparia. In short, instead of perplexing our minds with the confused subdivisions of authors, whose classifications betray they had no clear and scientific notions of the proper treatment of flatulence, the simple point to be ascertained and kept in view is, whether flatulence (always a mere symptom) is or is not accompanied with inflammatory irritation, is or is not attended with stomachic debility—and according as we decide these queries, we adopt the former or latter modes of treatment above mentioned. *Lancet, Nov. 20, 1847, p. 545.*

54.—ON THE USE OF ACETATE OF LEAD IN FLATULENT DISTENTION OF THE INTESTINES.—By Dr. J. C. Baddeley, Chelmsford.

[A patient having taken active purgatives for the relief of an attack of colic, and the bowels having been freely acted upon, was seized with distressing pain and cramps, and distention of the belly from flatus. Vomiting came on, and hiccough, and continued together with the pain and distention in spite of opiates, turpentine injections, calomel and opium, castor oil, &c.; and the case appeared desperate. Under these circumstances, Dr. Baddeley says,]

Feeling convinced in my own mind that, under the absence of inflammation, *this distention proceeded from want of tone in the muscular fibres of the intestinal canal*, and their consequent failure of power to contract and expel the increased generation of air, I ordered large doses of alum, persisting, at the same time, in the daily injection of turpentine, which appeared to give more relief than any other remedy which was applied. Again disappointed, however, in the result, and remembering the strong advocacy by Dr. Graves, of Dublin, of the acetate of lead in tympanitis, I determined to give it a fair trial, though not without considerable apprehension of its constipating effects.

I prescribed, nevertheless, three grains of the superacetate of lead, with the sixth of the grain of acetate of morphia, in a pill, every four hours, and a continuance of the turpentine enema every evening. The excellent effects of this combination soon began to manifest themselves, by the comparative suppleness of the abdomen, the expulsions of a large quantity of air, the subsistence of the cramps, spasms, and pain, and even by copious dejections. The hiccough gradually declined, the appetite began to return, and convalescence was at once established. The pills were reduced to only two in the twenty-four hours, and finally to one; and the patient is now only suffering from the debility and emaciation consequent on the severity and protraction of the attack. The validity of the theory of this practice is, therefore, I think, sufficiently proved to entitle it to publication; and as the prominent feature of the disease is by no means uncommon, I shall be happy to find that my calling the attention of the profession to the value of the acetate of lead has been productive of similar success in the hands of other practitioners. About two years ago I was equally successful with the sulphate of zinc and opium, in the case of a lady who had been severely afflicted with enteritis, and consequent distention of the abdomen; but the inflammatory symptoms in that case required of course a different plan of treatment, and copious depletion, ere it could be resorted to. The case having been already published, I shall not enlarge upon it on this occasion. I shall only, in conclusion, observe, that I believe abdominal distention from flatulence, and also constipation, to be dependent very frequently on want of tone and muscular power in the canal, and that as the repetition of drastic purgatives is often productive of this unpleasant result, relief may often be obtained from metallic tonics and medicines of an astringent nature. *Lancet, Jan. 8, 1848, p. 44.*

55.—OX-GALL IN CONSTIPATION.—EFFICACY OF OX-GALL IN REMOVING IMPACTED FÆCES.

Dr. Edward Vanderpool, of New-York, relates in the New-York Journal of Medicine, the case of a man, forty years of age, of full habit, whom he attended, who was suffering from pain and great distress in the right iliac region, preventing rest and sleep, and causing constant moaning. He had been confined to bed a fortnight with these symptoms, during which time he had been treated antiphlogistically for peritoneal inflammation; calomel, cathartics, and castor oil had been repeatedly given, producing only a slight fæcal evacuation every day; calomel and ipecacuanha, and calomel with Dover's powder, had been continued in small doses; his mouth had been touched for more than a week; leeches had been repeatedly applied, and at last a blister. The right iliac region appeared preternaturally full; a hardness was here discoverable, as of a tumour lying deep in the abdomen, occupying the seat of the cœcum and ascending colon, which was very painful on pressure. For two years he had been subject to colicky pains, for which he would every week or two take a cathartic dose of calomel at night, and follow it with salts in the morning. A small motion would be the only result, with the invariable feeling of not being relieved. The inspissated ox-gall was prescribed, in doses of eight grains, three times a-day, and enemata of diluted gall, to the amount of two quarts, night and morning; broth and farinaceous drinks. The first enema extended to the part affected, and produced a quantity of scybalous fæcal matter, with some mucus. Some alleviation followed this evacuation. The enema was repeated next morning and evening with the effect of an increased quantity of old fæcal matter, and less pain afterwards in the iliac region. Considerable exhaustion following the morning enema, it was thought better to omit it in future, and give eight grains of the gall four times a day, and use the injection at bedtime. This course was pursued for ten or twelve days, resulting with a voluntary fæcal evacuation in the morning, which had the appearance of long impaction, and a quantity of the same in the evening, believed by the patient to have been by him two years. The abdomnal distress abated as this old fæcal matter passed off, and the mucus daily lessened in quantity. He convalesced steadily without any other medicine, and was soon discharged cured. *Med. Times, Jan. 1, 1848, p. 215.*

56.—NEW SUPPOSITORY SYRINGE.

At a meeting of the Westminster Medical Society, Dr. COLEY exhibited an ingenious suppository syringe, consisting of a tube like an enema pipe, and a handle acting like that of a common syringe. There is a small orifice at the extremity of the tube in which the suppository is placed, and when the tube is inserted into the rectum, the piston is pushed forward, and the suppository placed in situ. The exhibitor had invented it many years since, but it was not generally known. *Lancet, March* 25, 1848, *p*. 341.

URINARY ORGANS.

57.—ON ACIDITY OF THE ANIMAL FLUIDS.—BY M. MIALHE.

In some investigations conducted a few months ago, M. Mialhe found that the greater part of the fluids of the animal body are naturally alkaline, and that therefore the excessive employment of alkaline remedies cannot speedily produce any very injurious effect, since they do not alter the nature of the fluids within which are effected those chemical changes which are continually taking place in the body. This alkaline condition of the animal fluids distinguishes them from the vegetable fluids, whose composition is usually of an acid nature. The alkaline state seems to be quite essential in order that the decomposition and subsequent assimilation of amylaceous and hydrocarbonated principles received into the system should be duly effected; and it does not appear that an excess of alkali interferes with the production of these important changes.

M. Mialhe found, also, that the employment of alkaline medicines, usually efficacious, can only be injurious where the fluids already contain an excess of alkali—an event which happens in some morbid states. It occurs, for example, among the inhabitants of the country, who are exposed to the full force of the sun, and have to undergo a great amount of labour, whereby a large quantity of acid is excreted from the system in the form of sweat, and, in consequence, the animal fluids are kept in a very alkaline condition. The same thing happens, also, among those who live chiefly on a vegetable diet, and who thus introduce into their system a large quantity of alkaline carbonates, formed by the decomposition of the salts of the organic acids contained in the vegetable food. From these considerations M. Mialhe maintained that the administration of alkaline remedies in even considerable doses is productive of less decided and less speedy harm than the administration of acids. His present observations are intended to demonstrate the truth of this proposition.

He remarks, that, inasmuch as the principal animal fluids are usually alkaline, and inasmuch, therefore, as the chemical and vital changes continually taking place in the body are effected, for the most part, in an alkaline medium, it is quite evident that if the fluids become altered in their nature, if they are rendered neutral or acid, important functional disorders will infallibly ensue. In the presence of acids, or even in the absence of alkalies, the chemical phenomena which ordinarily take place can no longer be produced in the same manner; the process of nutrition will not accomplish the necessary metamorphoses; all the vital fluids whose composition is thus so different from their natural state, will no longer be able to give rise to those intimate changes which they are destined to determine within the substance of organs and tissues. The system unaccustomed to such conditions will at first resist, but, after a time, must yield to their continued influence, and then will arise general debility, combined with serious diseases, which it will be difficult to overcome so long as the acid state of the fluids continues, or even after its disappearance, if it has long existed. Pyrosis, uric acid gravel, gout, scurvy, and diabetes—affections between which there is a much closer relation than is usually supposed—are among the consequences of this abnormal state of the animal fluids.

The excess of acid in the animal system is, unfortunately, an event which may very readily occur, and may be the result of many different causes. The first of these causes is the ingestion of acids themselves. During the intense heat of summer, persons are very apt to allay the ardent and frequent thirst they are then so much troubled with by indulging in large quantities of acidulated drinks. Another source of acid principles in the animal fluids may be in the too exclusive employment of nitrogenous articles of food. The albuminous matters of which such alimentary principles are composed contain a large quantity of sulphur and phosphorus, and these bodies, by the kind of combustion which they are supposed to undergo in the system, give rise to a considerable amount of sulphuric and phosphoric acids, which at first saturate the alkaline bases they meet with in the animal fluids, and then produce an acid state of these fluids, and so lead to the occurrence of the evils above pointed out. A third and more important cause of acidity is derived from excessive rest of the body—from inaction. The want of exercise is an obstacle to the secretion of perspiration, and the acids which, by the healthy discharge of this function, would be eliminated from the system, are, by its interruption, retained, and speedily give rise to the ill consequences resulting from their presence.

It is certainly to these causes that must be referred the superabundance of acid which so frequently occurs in the animal system. And the diseases, which are especially the effects of this abnormal condition, such as gout, the lithic acid diathesis, and diabetes, most frequently do occur among those persons who are the most exposed to the influence of these causes. Hence their prevalence among the rich, who, from the highly nitrogenous character of their food, and the small amount of exercise taken by them, are very prone to the formation of an excess of acid in their system. Gout is an affection seldom suffered by the inhabitants of the country, for their active lives and frugal habits are opposed to its attacks: they enjoy a like immunity from diabetes also. According to M. Mialhe's theory of the nature of diabetes, it would seem that this disease is essentially connected with an acid state of the animal fluids. When such acidity exists, however it may be produced, the glucose resulting from the amylaceous principles taken as food, can no longer be decomposed and assimilated: for in order that its assimilation should be effected, it must be brought into relation with an alkali; and it therefore accumulates in all parts of the system, giving rise to the phenomena of diabetes. In confirmation of this view, M. Mialhe remarks, that herbivorous animals are entirely strangers to diabetes; a circumstance which he thinks to be due to the alkaline condition in which all their fluids—even urine, which among carnivora is naturally acid—are kept by the constant use of vegetable food, and by the habits with which these animals are endowed by nature.

The lower classes in a country district, who by their hard labour perspire largely, may with impunity partake of acidulated drinks to a considerable amount: for the acid thus taken in is speedily eliminated in the fluid of perspiration, and, moreover, the vegetable food of such persons tends to neutralize any excess of acid that may occur in the system. The same will apply to the inhabitants of hot climates, who indulge most largely, and without danger, in lemons, pomegranates, tamarinds, and other acid fruits. It must be observed, also, that the use of acid fruits is at all times likely to be attended with far less injurious consequences than the employment of free acids, for a portion of the acids contained in fruits always exist there in the state of an alkaline salt, which allows of being transformed, in the blood, into carbonate of potash.

This fact explains why certain acid fruits, such as grapes, are capable of rendering the urine alkaline, and to such an extent, that they are sometimes employed with advantage in the lithic acid diathesis. When acids are taken by persons who use little exercise, and who, at the same time are exposed to a low temperature, by both of which circumstances the secretion of sweat is interfered with, they speedily induce an acid condition of the system, and are liable to be followed by the injurious results depending upon such condition. The course to be pursued in such cases is quite obvious, namely, to take free exercise, to employ alkalies, and to abstain from food containing much albuminous principle.—*L'Union Medicale*, 19 *Fevrier*, 1848. *Med. Gaz., April* 14, 1848, *p.* 656.

58.—ON CERTAIN FORMS OF ALKALINE URINE.—By Dr. G. O. Rees, F.R.S., Assistant Physician to Guy's Hospital.

The fact that an alkaline condition of the urine may occasionally be removed by the exhibition of alkaline remedies, is well known to those who see much of urinary disease. In 1845, I took occasion to refer to such cases, as follows:—"The real disease exists not in the presence of any peculiarity on the part of the kidney as a secreting organ, but on a tendency to the production of *alkaline fluid on the lining membrane* of the whole, or a part of the urinary apparatus." * * * * "It almost admits of demonstration, that the kidney frequently secretes urine possessing the qualities of health, with its acid reaction and other normal qualities, while it passes from the urethra fœtid and ammoniacal." * * * * "If the alkali were administered in small doses, so as only partially to neutralize the acid state of the urine as secreted by the kidney, we might relieve the irritation of the mucous membranes, stop the excretion of alkaline matter, and have an acid urine excreted; the natural acidity having been only partially destroyed by our remedy."

Some months ago I heard from my friend, Mr. Henry Wakefield, that he had a patient whose abdominal parietes were deficient, and whose bladder (as is generally the case with such persons) possessed no anterior walls, so that the fundus was protruded through the abdominal opening.

On visiting this case, and examining the protruding fundus of the bladder, I easily detected the openings of the ureters, and could see the urine dropping constantly from them. The urine, when tested with blue litmus paper, immediately reddened it, and evidently possessed the full acidity of health. This result was obtained, however, only when the test was applied close to the openings of the ureters. On placing a piece of the blue paper in such a position as to receive the urine as it dripped from the patient, and consequently after it had passed over the mucous surface of the bladder, no indications of acidity could be detected, the paper retaining its blue colour. Reddened litmus paper, however, was immediately turned blue by this urine, and in such a manner as to show the presence of alkali in considerable excess. The litmus paper could thus be turned red or blue at will, accordingly as we held it in the urine, at the openings of the ureters, or, on the other hand, placed it so that it might receive the urine as it dropped from the patient, and consequently after it had been acted upon by the exposed mucous surface. The lower part of the exposed fundus was thus alkaline, while immediately below the openings of the ureters the urine rendered the surface acid. The short distance which the acid urine had to pass over the membrane, and its consequent subsequent flow in an alkaline state, are circumstances which show how plentifully and rapidly the mucous surfaces can secrete alkaline fluid when it becomes necessary for their protection, and removes the difficulty which might suggest itself to the mind in arriving at the belief that so large a quantity of fluid as that which enters the bladder could have its acidity more than saturated by such a cause. That the mucous membrane can perform this is most certain; and the application of the fact as an element in our considerations when investigating diseases connected with an alkaline state of the urine, is a matter of

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most paramount importance. Cases showing symptoms said to be indicative of the phosphatic diathesis, have caused practitioners much anxiety, and we are too apt to connect them with debility or wasting of the nervous centres. I feel sure that a great number of such affections have their origin in nothing more than an increased alkaline discharge from the mucous surfaces. This has been sufficient to cause the excretion of alkaline urine in quantity; and, in consequence of its alkaline condition, the earthy phosphates become deposited,—thus affording the practitioner a symptom to which he may attach most undue importance. The case, in fact, may even be one in which the urine has been secreted abnormally acid, the changes giving it a phosphatic character having occurred subsequent to secretion, and as a consequence of irritation of the mucous surface lining either the bladder, the ureters, or the uriniferous tubes. *Med. Gaz., April* 7, 1848, *p.* 579.

56.—ON THE EXISTENCE OF URIC ACID IN HEALTHY URINE.—By Dr GOLDING BIRD, F.R.S.

The use of the kidneys is to convey without the system principles the stay of which would be detrimental. Dr. Bird, from a large number of observations, infers that the quantity of solids conveyed out of the system by the kidneys may amount, on an average, to from 600 to 700 grains in the course of twenty-four hours; or, making allowance for variations dependent on the amount of exercise, the kind of regimen, diet, and idiosyncracies, it may be estimated at 650 grains in twenty-four hours. Of this, from 255 to 270 grains, or more than half an ounce, are urea, which are eliminated during the same time.

Besides urea, the urine contains uric acid, sometimes separately, more frequently in union with ammonia, so as to form urate of ammonia. It is to be observed, however, that in opposition to the idea of uric acid being ever alone in the urine, it is so insoluble as to require, according to Dr. Prout, 10,000 parts of water at 60 degrees for solution, while the urine has not of water quite 2500 times the weight of uric acid. It is hence to be inferred, that there is a chemical impossibility in the uric acid existing in the free state in the urine, unless there be some other yet undiscovered means of rendering this substance at least four times more soluble in the urine than chemical experiment has shown it to be. On the other hand, urate of ammonia is soluble in 480 times its weight of pure water, and in the state in which it occurs in urinary deposits, it requires for its solution 2789 parts of urine, according to the researches of Dr. Bence Jones, who further shows that the presence of a moderate quantity of saline matter, such as urine usually contains, increases the solubility of urate of ammonia.

The state of the argument, therefore, stands thus:—Eight grains and one-tenth of uric acid (8.1) are normally secreted in twenty-four hours. These require only 0.82 grains of ammonia for saturation or conversion into urate of ammonia; and the 8.92 grains of urate of ammonia thus formed may be held in solution by less than half a pint of water, or about one-fourth of the quantity separated from the blood by the kidneys.

Further, by slow evaporation of healthy urine in the air-pump vacuum—in other words, by diminishing the amount of the solvent—the urine becomes turbid from clouds of urate of ammonia, which ultimately subside in minute spherical masses on the sides of the vessel. The same effect takes place when urine of high gravity is exposed to cold. From all these various facts, the inference of Dr. Prout, that uric acid must be combined with ammonia in order to be conveyed without the system, seems in the present state of knowledge indisputable.

On the other hand, it is maintained by Becquerel and some other authorities, that the uric acid is free, and that, were it not so, a single drop of ni-

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tric acid would not be sufficient to precipitate the uric ac[illegible] considerable quantity of urine, as is the case. Dr. Bird justly observes this objection is more apparent than real; for while so small a quantity of ammonia is required to render the uric acid soluble, viz. about two-tenths of one grain in half a pint, it is easy to see that, if this be neutralized, which it is by eight-tenths of one grain of nitric acid, or less than one drop, the objection entirely disappears.

How, then, are we to explain the natural acid reaction of healthy urine? Is it not owing to free uric acid? Or is it owing to the lactic acid of Berzelius, and the presence of which is maintained by Cap and Henry. To the last it cannot be owing, because that is shown to be, if we believe Gregory and Liebig, not present in urine; and what was taken for it and the lactates is now believed to be organic matter, the exact nature of which is not ascertained, but which contains both kreatine and kreatinine. The difficulty appears to be elucidated, if not fully explained, by some researches of Professor Liebig on the mutual reactions of uric acid with alkaline basic phosphates. It is known that a watery solution of the common or the basic phosphate of soda exerts an alkaline reaction on litmus paper. If uric acid be heated with such a solution, it is dissolved by reason of combining with part of the soda, and setting free part of the phosphoric acid, which is supposed to form a super-salt with some of the undecomposed phosphate. The fluid in this state reddens litmus paper. On cooling, the phosphoric acid reacts on the urate of soda, and about one-half the uric acid is deposited in fine prismatic crystals, resembling in shape some varieties of uric acid sand. These crystals are not, however, pure uric acid, but contain chemically combined some phosphate of soda, of which they are not deprived either by boiling water or hydrochloric acid. The addition of an acid to the fluid decanted causes the deposition of uric acid in tabular crystals. These facts, and the inferences deducible from them, Dr. Bird thinks quite adequate to explain the natural acidity of urine, and the deposition of crystals of impure uric acid on cooling. All that this requires is to suppose that the .398 of one grain of uric acid, the average quantity existing in 1000 grains, are dissolved in about 2.5 grains of tribasic phosphate of soda, the proportion of this salt found by Simon in 1000 grains of urine.

The deposits frequently found in the urine, on cooling by evaporation in vacuo, or exposure to a freezing mixture, are, however, neither always crystalline nor composed of uric acid alone. They were shown by Prout to consist of urate of ammonia, more or less tinged with colouring matter; and they are or may be amorphous and readily soluble in warm water, which scarcely acts on uric acid. Hence another explanation, or one which accounts for the formation of urate of ammonia, becomes requisite. This Dr. Bird thinks may be found in the presence of the microcosmic salt or double phosphate of soda and ammonia, and the action of uric acid thereon. When to a warm solution of this triple phosphate, uric acid is added, urate of ammonia is formed, and phosphoric acid is evolved, either free or combined with a base, and forming an acid salt. This urate of ammonia is not decomposed on cooling, but is deposited in delicate microscopic needles, readily redissolving on the application of heat, if sufficient water be present. On adding urine to a warm solution of these acicular crystals, they are deposited on cooling combined with the colouring matter of the urine, completely amorphous, and presenting all the characters of the commonest forms of urinary deposits. This experiment seems to show that the presence of the microcosmic salt or triple basic phosphate of soda and oxide of ammonia causes the deposition of urate of ammonia, while the colouring matter renders the deposit amorphous.

Dr. Bird then proposes, as probable, the following explanation of the mode in which uric acid exists in healthy urine,—"Uric acid, at the moment of separation from the blood, comes in contact with the double phosphate of soda and ammonia derived from the food, and forms urate of ammonia, evolving phosphoric acid, which thus produces the natural acid re-action of the urine. If the whole bulk of the urine be to the urate of ammonia formed not less than 2701 to 1, the secretion will, at the ordinary temperature of the air, remain clear; but if the bulk of fluid be less, an amorphous deposit of the urate will take place. On the other hand, if an excess of uric acid be separated by the kidneys, it will act on the phosphate of soda of the double salt, and hence, on cooling, the urine will deposit a crystalline sediment of uric acid sand, very probably mixed with amorphous urate of ammonia, the latter usually forming a layer above the crystals, which always sink to the bottom of the vessel."

On the question of the physiological origin of uric acid, the author gives the opinion of Liebig, Lehmann, Zimmermann, and Heller; but as all are more or less open to objection, it seems useless to reproduce them. It is sufficient to say that the hypothesis of Liebeg, which is supported by Zimmermann, is at variance with several well-known and established facts. The professor of Giesen, in short, in his anxiety to demonstrate the all-powerful and constant action of oxygen within the system, has carried that doctrine to its uttermost verge; for, if all be correct that he states to be, especially as to the influence of oxygen in effecting metamorphosis of tissue, then would it follow that man and several other animals would be in the constant danger of being oxydized to death. It may be the fact, that the constant introduction of oxygen does produce a slow consumption or combustion of all the tissues, and thus hastens the death of the animal. But on the other hand, that doctrine seems highly questionable, which, in explaining certain physiological processes of the human body, is opposed to facts and daily observation. In truth, were the views of Professor Liebig correct, the proportion of uric acid ought to be increased when the food taken is rich in carbon, and to diminish if the individual confined himself to a nitrogenous diet, or in other words, lived solely on animal matters. Now, the contrary of this is known to be fact by all observation and all experience.

What are the facts in this case? Are they not that the proportion of urea and uric acid is increased when the food *cæteris paribus* consists merely of animal matter, and diminished when the food is made to consist of vegetable matter? This was clearly shown by the experiments of Magendie and many others, and accurately ascertained by experiments by Lehmann on himself, who found that under a diet strictly animal, 11.4 more grains of uric acid were excreted in 24 hours, and 582.1 grains more urea were discharged from the system, than when living on vegetable food.

Ed. Med. and Sur. Jour., Jan., 1848, *p.* 145.

60.—ON THE PATHOLOGY OF DIABETES.—By Dr. R. B. Todd, F.R.S.

For all practical purposes we may, in the present state of our knowledge, adopt with advantage the following view of the pathology of diabetes:—That it is primarily a disease of the mucous membrane of the stomach, whereby an abnormal disastase is formed, which readily converts into sugar such aliments as admit of that conversion; the mucous membrane probably likewise secretes sugar; the sugar thus formed passes into the blood, and is rapidly eliminated by the kidneys, causing at the same time the attraction to those organs of the elements of a large quantity of water. This theory essentially agrees with that put forward many years ago by our countryman Dr. Rollo, who was the first to point out theoretically, as well as practically, the importance of a diet consisting mainly of animal food in this disease. *Prov. Med. and Sur. Jour., April* 5, 1848, *p.* 169.

61.—ON THE USE OF THE POLARISCOPE IN TESTING URINE.—By Dr. J. S. BUSHNAN.

Having lately had occasion to make some experiments with the polariscope, to ascertain the presence of sugar in urine, I venture to describe and recommend the instrument, which consists of a glass tube sixteen inches long, and capable of being hermetically closed at each end by means of a small plate of glass secured by a brass ring and screw. After having completely filled the tube with the fluid about to be examined, which is done by holding it vertically—taking care that no globule of air shall be introduced—and then closing it, a ray of linearly polarised light is made to traverse it, by fixing to its extremity, directed towards a white cloud, either a Nichol's prism, or a crystal of double-refracting power, as a tourmaline cut parallel to its axis.

A second prism, or a second tourmaline, fixed at the other extremity to which the eye is applied, permits us to see, through a circular division, in what degree the direction of the polarised ray is turned aside by the action of the liquid; and the angle thus formed is proportional to the length of the tube and to the quantity of active molecules, that is to say, to the density of the sugar, which seems to be the only active substance contained in the urine. As the fluid is generally high-colored and of feeble action, it is not possible to observe the colors developed by the unequal action of the liquid upon the different particles of white light; and consequently it is unnecessary to employ Nichol's prisms, which, besides, are not always to be obtained. The two tourmalines are quite sufficient, provided they are not too highly colored; and it is very easy to observe the total disappearance of the ray of light, when, by turning the eye-piece, the tourmalines are made to cross each other at right angles.

In placing the tourmalines in this position before the introduction of liquid into the tube, the index of the circular scale attached to the eye-piece being at the same time placed at zero, no ray of light is seen, while the use of an active fluid causes it to reappear more or less distinctly. On slightly turning the eye-piece with its contained tourmaline either to the right or to the left—and as it is turned the angle formed is marked by the index on the scale—we find that at a certain point the former obscurity is re-established; and it is the angle obtained at the moment the ray of light disappears and the obscurity is complete, that determines the quantity of saccharine matter contained in the fluid.

A circumstance unfavorable to this kind of research, is the commonly incomplete transparency of the urine, even after repose and filtration. Urine apparently limpid, when placed in the tube seems anything but clear; and a quantity of diffused light, mixing with that regularly transmitted, further impedes distinct vision; nevertheless, even when in some degree turbid, it is always possible, although with some indistinctness, to perceive the action of the ray transmitted through the tourmalines and saccharine urine.

As it seems to me, this process is much superior and far more simple than that recommended by M. Biot, employed by M. Bouchardat (Repertoire Générale des Sciences Médicales, vol. xviii.), and described by Dr. Golding Bird (*urinary deposits*), to detect sugar in urine by its action on polarised light. The instrument is less complicated; and, besides which, saccharine urine is seldom sufficiently clear to allow the colors produced by circular polarisation to become visible. Again, it is at any rate preferable to the usual modes of testing suspected urine, since no long and complicated chemical manipulation is required; the presence of sugar can be ascertained at once, and, if needs be, in the presence of the patient; and, when ascertained, its increase or decrease can be determined during the progress of treatment, by the greater or lesser angle obtained by the altered direction of the polarised ray passed through the fluid—the greater the quantity of sugar, the greater being the angle indicated upon the scale.

Med. Times, March 25, 1848, p. 424.

62.—TURPENTINE IN DIABETES.

[An anonymous contributor to the Lancet, stating that he has a patient who has had diabetes for ten months, during which the minimum quantity of water passed daily was nearly two gallons, goes on to say.]

About six weeks since alarming hæmoptysis appeared, (phthisis having supervened), to relieve which I administered spirits of turpentine. With the first dose the quantity of water diminished greatly, and after she had taken two or three doses of turpentine the urine was passed in its normal quantity, though not in its normal condition, as I could still obtain sugar by evaporation. I regarded this improvement in the diabetes as a mere coincidence, but on withdrawing the turpentine the water again increased, and that dreadful thirst, which had been absent, returned.

As the quantity of urine passed continued in very large quantity, I again had recourse to turpentine in the form of Chio turpentine. Instantly, as by magic, the quantity of urine decreased, has remained so, and I well know, that were I to omit the turpentine for one day, two gallons and a half of water would be the result. *Lancet, Jan.* 29, 1848, *p.* 136.

63.—REMARKABLE CASE OF DISEASE OF THE BLADDER.—By H. HANCOCK, Esq.

A patient was admitted into Charing-cross hospital, reported to have stone in the bladder; but Mr. Hancock could not obtain any professional account of his previous illness. When admitted, he labored under a stricture of the urethra, but had no symptoms of stone. He had a cicatrix in the perinæum, where had previously been a fistulous opening. Mr. Hancock introduced a catheter, but did not feel any calculus, and was therefore inclined to believe that none was present. He went on dilating the urethra, and when he was able to introduce a No. 9 catheter, he for the first time felt a grating, but it was on the concave surface of the instrument. The urethra continued to be dilated until No. 11 or 12 could be introduced. A consultation was held on the case, and though care was taken not to let the patient know anything of the result, he was so alarmed at the anticipation of an operation, that he became extremely ill and desponding, and died within a week, in a state of coma. Mr. Hancock performed the operation of lithotomy on the dead body. On making an incision, a small calculus presented itself in the wound, and he could feel no other stone. He then removed the bladder and surrounding parts. The bladder was thickened and contracted, and turned up over the pubes. It was entirely filled up with a pear-shaped stone, the smaller end of which projected through the prostatic portion of the neck of the bladder, and articulated with the smaller calculus which had presented itself at the wound. In the preparation there was a large cyst, communicating with the contracted bladder at its neck. The bladder having been unable to obtain any urine, this cyst, which had probably had its origin in an urinary abscess, had performed the functions of the bladder, having assisted to discharge the urine by the levator ani, which was much enlarged and thickened. He did not know of a similar preparation, or of a similar case on record. The kidneys in this case were very much disorganized, and the urine was generally acid and clear.

Lancet, March 18, 1848, *p.* 312.

SURGERY.

FRACTURES AND DISEASES OF BONE.

64.—HINT ON THE TREATMENT OF FRACTURES.—By Bransby Cooper, Esq., F.R.S., &c.

[Mr. Cooper observes that bones like all the other organs become increased in size by exercise, and that we should take advantage of this principle when we wish to excite the deposition of bony matter. Speaking on this subject he says,]

There can be no doubt that this increase is dependent on muscular action, and therefore nature points out a most important fact to be judiciously used in the treatment of fracture of bones, which is, that a patient is not to be kept too long inactive; and although rest and the recumbent posture are most essential in maintaining coaptation for a certain time, yet frequently it will be found that the employment of the muscles, and the effect of the weight being thrown upon the injured limb, is often the most ready and efficient mode of inducing ossific deposition. I certainly have frequently seen the union of a fractured bone much retarded by too protracted a confinement to bed, and have as often hastened the reparation by desiring the patient to get up, and throw a portion of his weight upon the disabled limb: I need scarcely tell you, gentlemen, of the necessity to protect the broken bone at the same time by well-adjusted splints. You will not only find after their continued exertion, the bones increased in size, but the muscles and the arteries also; and the whole apparatus for the nutrition of the limb is in the highest state of perfection, to sustain the additional call made upon it in the performance of its required duties.

Indeed, it is a similar condition to that kind of inflammation which is sometimes spoken of under the term "formative inflammation," an example of which we constantly find in the periodical increase of the vessels during the annual growth of the stag's horn, and of the spermatic arteries of those animals that have only certain seasons for procreative desire.

Med. Gaz., Nov. 26, 1847, *p.* 913.

65.—ON MOLLITIES OSSIUM.—By Bransby Cooper, Esq.

[This disease, depending immediately upon the want of the mineral constituents of bone, may arise either from a want of power in the organs of assimilation and absorption to take up the phosphate of lime contained in the food, or from the food itself not containing enough phosphate of lime to furnish the required supply. It is well known that when common fowls are prevented from getting lime, their eggs will be without shells, but on restoring the lime, the eggs regain their earthy covering. On the same principle Mr. Cooper proposes to treat mollities ossium: he says,]

I have on two or three occasions certainly had reason to believe that great benefit was derived from giving bone powdered and mixed with bread, and at the same time draughts containing phosphoric acid, which converts phosphate of lime into a biphosphate, a more soluble salt than the phosphate, and probably much more readily assimilated. The result of this treatment was certainly such as would warrant the just expectation of facilitating the nutrition of bone.

You will find, that it will require some moral courage to recommend such chemical treatment; for you must expect the jeers of the sceptical and igservant, whose reasoning powers never carry them beyond the empirical treatment handed down by the authority of their predecessors. I have *demonstratively* proved to you, I think I may say, over and over again, the advantages of applying phosphoric acid to exfoliating bone, to produce its rapid removal upon a principle precisely similar. These considerations will, I trust, lead you to perceive at once that the diseases of the osseous system are not in any way independent of the general laws which regulate the morbid conditions of every structure in the body, but that they are as completely subject to all the phenomena of nutrition and deterioratoin as the rest of the organisms. *Med. Gaz., Nov. 26, 1847, p. 913.*

66.—ON DISTORTIONS OF THE SPINE.—By Bransby Cooper, Esq.

[When these distortions arise from softening of the bones, Mr. Cooper repudiates the use of all such mechanical means as prevent the patient from taking gentle exercise in the open air. He says,]

The disease is a constitutional defect in healthy nutrition, and can be remedied only by the improvement of the general health, although it is true the application of simple mechanical means may aid this object so long as it does not interfere with the natural and vital functions of life. Use common sense, therefore, and bear in mind however the preponderance of physical disturbance to the natural functions of the spine may attract your attention, this state is only a result of a general constitutional deterioration, and that without the improvement of health no good can be effected. The remedies must (to be useful) be directed to the removal of the cause of the disease, and not to the effects. You should do all you can to strengthen the assimilative powers; and as there is every reason to believe that the nutrition of bone is most at fault, means should be adopted, as far as diet and medicine can avail, to remedy the evil.

Such diet, for instance, should be enjoined as contains most phosphate of lime; beef and mutton, and what is termed secondary bread, are therefore advisable: and phosphoric acid should at the same time be prescribed for the purpose of its union with the lime, rendering it capable of being more easily absorbed. Bottled porter will also assist in improving the constitutional powers of the patient; and care should be taken that the bowels are not relaxed so as to carry off the lime too quickly, instead of leaving it to be taken up by the absorbents of the intestinal canal. The physical treatment indicated is to support the weight of the trunk by the most simple mechanical means competent to relieve the affected bones; and such muscles should be put into gentle action as have a tendency to counteract the unnatural direction the bones may have acquired from the influence of the existing abnormal causes, viz., the undue disposition of the weight and altered muscular action.

Patients labouring under this affection should be frequently in the open air, and they should be permitted to take gentle exercise, but they must avoid most cautiously the slightest fatigue either of body or mind; riding in an open carriage, or sailing on the sea, is the very best kind of recreation which can be adopted. *Medical Gazette, Nov. 26, 1847, p. 917.*

DISLOCATIONS AND DISEASES OF JOINTS.

67.—A CASE OF OLD DISLOCATION OF THE RADIUS SUCCESSFULLY REDUCED.—By Dr. J. Stark, Edinburgh.

[A little girl, aged nine years, fell from a table and hurt her elbow; but the true nature of the injury was not ascertained until two years afterwards, when Dr. Stark was called to attend the child for an attack of chicken-pox.

The form of the joint then attracted his notice, and he immediately recognised a dislocation of the head of the radius forwards. The little girl carried her arm as if it were paralytic, and it was indeed almost useless: but the only bone which appeared to be altered in form was the external condyle, which was diminished in size, and its sharp edges rounded. Dr. Stark says,]

Two questions then presented themselves for consideration. First, Was it prudent to meddle at all with such an old dislocation? Secondly, If so, and the reduction should be effected, was there any chance of the restored joint proving as serviceable as even the preternatural one now formed, seeing that the articular surface of the humerus was so altered in shape?

On consulting the writings of Flaubert, Marx, Sir Astley Cooper, and Dupuytren, who more especially treat of the reduction of old dislocations, it was ascertained that these able surgeons coincided in opinion, that ball and socket joints could be reduced at a much later period of time after the occurrence of the dislocations than hinge-joints; and yet, of even these joints they limit the period, during which it is either safe or possible to reduce them, to a few months. In the case of hinge-joints (as the elbow) they unanimously agree, that within a very short period after dislocation, they become irreducable, without using such an amount of violence as to tear across muscles, nerves, and blood-vessels, and thus endanger life by rendering amputation of the limb necessary.

With regard to the particular dislocation now under review, Sir Astley Cooper relates, that during his extensive practice he had only seen six cases. Of these, four were unable to be reduced, though the most varied and violent efforts were used. The other two were reduced. In my own practice, only two cases of dislocation of the head of the radius forwards had previously been met with. In the first case, the woman fell over a window three stories in height, and, besides other injuries, received a compound fracture of the condyles of the humerus, with displacement forwards of the head of the radius. In consequence of the injury to the soft parts, and the fracture of the condyles, the head of the radius could not be retained *in situ*, and when the cure was effected, the *callus* had formed a new socket for the head of the radius, and it was not considered prudent to interfere with it. From the head of the radius moving in a bony socket, the arm soon afterwards became quite strong, though it never could be bent so as to allow the fingers to touch the face; and the woman, by occupation a washerwoman, was able to prosecute her usual employment. In the other case, the accident occurred from falling on the ice, alighting on the hand; and the reduction was easily effected by pulling by the hand, and bending the forearm on the arm, when the head of the radius was brought to the edge of the articular surface of the humerus, at the same time pressing down the head of the radius with the thumbs.

In the present case, the child was of a soft lax fibre, and as the arm was comparatively useless and weak, it was wasted or much softer, thinner, and less muscular than the sound arm. Provided, therefore, that the extension was applied gradually, and care was taken not to employ such violence as would cause the rupture of muscles, nerves, or blood-vessels, there appeared to be nothing to contraindicate an attempt at reduction. The consideration of the second question seemed still further to indicate that an attempt ought to be made to reduce the dislocation. The present state of the arm was a constant source of annoyance. It was disfigured in shape, was weak, and comparatively useless.

As the head of the radius was uninjured and normal in form, it was not considered any objection that the external condyle of the humerus was somewhat altered in form, seeing that it was probable that when the bones were put *in situ*, that part would recover its former size and structure. By effecting the reduction, therefore, there was every chance of the limb being rendered more useful than it had been since the period of the dislocation.

As from the cases related by Flaubert, Marx, and Dupuytren, it appeared that the chief danger in reducing old dislocations arose from the risk of rupturing the muscles, blood-vessels, or nerves, by employing violent efforts at reduction, it was determined in this case to extend the arm firmly, but gently, day by day, till the new adhesion of the head of the radius were so much lengthened, or the head so loosened from its new site, that, by the employment of not much additional force, the bone would at last be put into its proper place. The extension was effected by seizing the hand of the patient with the right hand, bending the elbow-joint so that the fore-arm formed a right angle with the arm, and applying the counter-extension by passing the left hand close above the elbow-joint, and thus fixing the humerus. The extension was then continued till slight uneasiness was complained of. This was repeated daily from the 12th May till the 2nd of June 1847. By this time the head of the radius had become quite loosened, and could be pulled to the edge of the articular head of the humerus. On the 2nd of June, therefore, I made the extension and counter-extension myself, and when the head of the radius arrived at the edge of the articular surface of the humerus, allowed the ball of the thumb of the left hand to press against it; when bending the fore-arm on the arm, the bone quietly slipped into its place. The head of the radius was found to have a strong tendency to slip out of its place and return to its former situation in front of the elbow-joint, partly on account of the altered form of the condyle of the humerus, partly from the cavity of the joint being filled with the fore-mentioned elastic fibrous deposit. The arm was therefore kept much bent, and the hand tied up across the chest, so that the tips of the fingers almost touched the opposite clavicle.

[In about a fortnight slight passive motion was commenced, and after a further interval, the forearm was allowed to be lowered; great care and attention were bestowed upon the case, to keep the head of the radius in its place: and in October the cure was nearly perfect, the arm affected being nearly as strong as the other. From this case Dr. Stark thinks we may learn some lessons with regard to old dislocations generally,—that an old dislocation when properly managed may be successfully reduced, even when some alteration has taken place in the form of the bones, or when the joint has become more or less completely filled up:—and that the extension in such cases should be made slowly and gradually day after day, so as to loosen the attachments of the artificial joint, and lengthen the muscles, nerves, blood vessels, and ligaments; so that when the final pull is given, there may be no risk of laceration.]

Edinburgh Med. and Surg. Jour., Jan. 1848, *p.* 77.

38.—DISLOCATION REDUCED UNDER THE INFLUENCE OF CHLOROFORM.—

By W. B Page, Esq., Surgeon to the Cumberland Infirmary.

[This was a case of dislocation of the left humerus into the axilla, of eleven days standing, occurring in an athletic railway labourer.]

An attempt was at once made at reduction by means of the heel in the axilla, but without any sensible effect being produced. Two hours after he was seen by Mr. Page, who directed that the same means should be again employed, the patient being placed under the influence of chloroform; accordingly, the man being placed on a couch, about a drachm sprinkled on a handkerchief was held before his face, which speedily induced a state of perfect unconsciousness. The heel was placed in the axilla, and extension made from the hand, the operator receiving no additional aid from pulleys, or any other person, and in two minutes the head of the bone resumed its lost seat on the glenoid cavity of the scapula. After the first few inhalations there was a great tendency to violence, which continued for some seconds, and during the whole time that extension was continued he talked incessantly, and most vociferously. He soon recovered his sensibility, and said that he had dreamt he was falling down a precipice, but had felt no pain. — *Prov. Med. and Surg. Jour., Feb.* 23, 1848, *p.* 97.

69.—ON LUXATION OF THE SEMILUNAR CARTILAGES.—By J. P. Vincent, Esquire.

[The internal cartilage is most frequently luxated, and the accident is marked by the joint becoming locked, on some quick motion of the trunk about the axis, on one leg; sometimes there is great pain, and a slight projection of the cartilage beyond the margin of the head of the tibia. With regard to the treatment, Mr. Vincent tells us that,]

The true way of manipulating here, is to place the patient on his affected side, with the limb bent, and then to rotate gently the tibia on its axis. In this position the joint is loose, making no pressure on the cartilage, and it has the best chance of quietly slipping into its place. I have often known in this luxation, when left alone, that whilst the patient was asleep the cartilage has slipped into its place after a few days. A medical gentleman in the country came to me, not long since, to confer with me about a case of this sort in a patient of his, a miller. He had tried every experiment in vain. I assured him he might make his mind easy, and go back and try to keep the miller in bed, and it would slip into its place while the man was asleep. He very soon wrote to me word, that to his joy, it had happened as I had predicted, even though he could not prevent the miller going into his mill. I have seen great violence used in efforts to reduce the cartilage to its place, but all to no purpose. If the gentle rotatory motion does not succeed, the only thing is to keep the patient in bed, and in some of his slumbers all will come right. Of course, if this accident has once occurred, it will be liable to happen often.—*Vincent's Observations on Surgical Practice.* *Med. Gaz., Jan.* 14, 1848, *p.* 65.

70.—ON LOOSE CARTILAGES IN JOINTS.—By Bransby Cooper, Esq., F.R.S.

The synovial membrane is sometimes subject to abnormal growths, the most frequent of which consists in a pulpy structure first described by Benjamin Brodie, and which is so similar to the prolongations I mentioned when speaking of the cases in which the articular cartilage has become absorbed, that I can only regard it as a reparative effort on the part of nature to check the deteriorating process in the latter structure, for where I have had the opportunity of examining a diseased joint after amputation, I have invariably found these prolongations or abnormal growths of synovial membrane to be concomitant with progressive morbid change in the articular cartilage: sometimes small pendulous processes are found in the synovial capsule, and on them is imbedded a tissue resembling cartilage in every respect. They ofter grow to a considerable size before they become detached, in which latter state they are termed loose cartilages.

While they remaim fixed to the membrane they are productive of but little inconvenience, but when detached they frequently get between the articulatory surfaces of the joint, and suddenly prevent its motion, causing considerable pain, and inducing so much inflammation, that very active treatment is required to subdue it.

While this extraneous body remains in the joint, the patient is always liable (under exertion) to suffer from its interference; hence it becomes necessary to resort either to palliative treatment, or to attempt the radical cure of the disease. The most usual, and perhaps the safest plan, is to endeavour by careful manipulation to expel the loose cartilage from the field of motion of the joint, and to prevent its return by a knee-cap connosis of burssæ mucosæ; they are sometimes so hard as to be mistaken for small exostoses: and, by the enlargement of the bursa, between the latissimus dorsi muscle and the inferior angle of the scapula, a tumour may be formed, which might be readily mistaken for chronic abscess, steatoma, or even malignant disease; but a surgeon conversant with the character of ganglia in their natural state, would soon discover the real cause of the swelling.

On the feet, and more particularly on the inner side of the root of the great toe, an adventitious bursa, termed a bunion, is very frequently formed; it is produced by tight and ill-made shoes, which force the great toe into an unnatural position, out of the line of the axis of its metatarsal bone, and under the other toes, in such a manner that the bone of the first phalanx presses forcibly on the capsular ligament of the joint, and induces the inflammation and acute pain inseparable from this distortion. Unless the deformity be remedied, the continued pressure of the bone tends to increase the inflammatory action, and ulceration would be the ultimate result, were it not for the compensating provision of nature, which leads to the formation of a ganglion between the capsular ligament and the skin. If, however, the pressure be still continued, it may induce inflammation of the adventitious bursa, and an inflamed bunion is the consequence; this so completely cripples the sufferer, and the pain is so excessive, that surgical aid is here usually sought, although, however, various mechanical contrivances have been proposed, and also many different kinds of plasters, the object of all being to remove the pressure which has been the original cause of the disease. No treatment can prove successful, unless the great toe be restored to its natural relative position parallel with the others, and the most simple and effectual means of effecting this, is the one adopted by my colleague, Mr. Key; he recommends that the stocking of the patient should be furnished with a division or compartment, resembling the finger of a glove, to receive the affected toe, a similar compartment being also constructed in the inside of the shoe; into these the toe passes, and is preserved in a direction parallel to that of the others; but it may be necessary before resorting to the use of this contrivance to subdue the local inflammation by the application of leeches, blisters, or evaporating lotions.

A ganglion on the dorsum of the foot or instep, sometimes produces even a more serious form of the disease than the bunion. It may cause contraction of the extensor tendons of the small toes, permanently extending the latter, so that the whole of the weight of the body falls during progression upon the first phalanges, in which situation ganglia are found precisely similar to that just described as occurring at the point of the great toe. If these become indurated by neglect or continued pressure, so that the effused contents cannot be let out by puncture, the only alternative left to the surgeon is to divide the implicated tendon or tendons, so as to relieve the permanent extension of the phalanges, and to restore the toes to their natural position. I have known exfoliations of the phalanx to occur as the result of this affection, but immediately upon the removal of the exfoliating bone, the deep ulcer which had been produced in the sole of the foot, healed, and the patient at once recovered.

Med. Gaz., March 31, 1848, *p.* 529.

AMPUTATIONS.

75.—NEW OPERATION ON THE FOOT.—By T. WAKLEY, Esq., Surgeon to the Royal Free Hospital.

[In a case of caries affecting the astragalus and os calcis, and appearing to be confined to those bones, Mr. Wakley, at the urgent desire of the patient, resolved to dissect them out.]

The operation was performed on Monday last, December 27th, in the presence of between forty and fifty practitioners. The operator was ably assisted by Mr. Gay, his colleague, and Mr. Erasmus Wilson. The man having been placed on the operating-table, Mr. Robinson administered the chloroform, when a complete state of insensibility was soon induced. The diseased foot (the left) having been drawn forwards so as to be free of the operating-table, Mr. Wakley, standing directly in front, and holding the scalpel in his left hand, made an incision from the prominence of the *internal* malleolus backwards and downwards to the middle of the heel. A similar incision with the right hand was then made from the *external* malleolus, downwards and backwards, to join the foregoing. A third incision was next carried along the edge of the sole, from the middle of the first to a point opposite the astragalo-scaphoid articulation; and a fourth on the opposite side of the sole, from the vertical incision to the situation of the calcaneo-cuboid joint. These latter incisions enabled the operator to make a flap of about two inches in length from the under part of the sole. In the next place a circular flap of integument was formed between the two malleoli, posteriorly, the lower border of the flap reaching to opposite the insertion of the tendo-Achillis. This flap being turned upwards, the tendon was cut through, and the os calcis having been disarticulated from the astragalus and cuboid bones, was removed, together with the integument of the heel included between the two incisions. The lateral ligaments connecting the astragalus with the tibia and fibula were now divided, and the knife was carried into the joint on each side, extreme care being observed to avoid wounding the anterior tibial artery, which was in view. The astragalus was then detached from the soft parts in front of the joint, and from its articulation with the scaphoid bone, and the malleoli of the tibia and fibula were removed with the bone nippers. The only artery requiring ligature was the posterior tibial. During the few minutes the operation occupied, the patient did not manifest the slightest symptoms of pain or uneasiness.

On bringing the edges of the flaps together, they were found to fit with complete accuracy, and were secured by twelve points of interrupted suture. They were supported by several folds of lint, and by means of a light bandage. The patient, who had lost but very little blood, was then removed to bed. Six P.M.: the patient feels a little pain, and is weak; no bleeding from the wound. Twelve o'clock: has been dozing; complains of pains; no hæmorrhage. Ordered, a grain of morphine.

Dec. 30th.—Union by first intention has taken place everywhere, except the inner side of the foot. The man is doing well, no bad symptom having presented itself. *Lancet, Jan.* 1, 1848, *p.* 8.

76.—ON THE AMOUNT AND CAUSES OF THE MORTALITY OF OPERATIONS.

—By Dr. FENWICK, Lecturer on Pathological Anatomy, at the Newcastle-on-Tyne School of Medicine.

[At p. 173 of our last number, the reader will find an abstract of a very interesting paper, by Dr. Fenwick, on the statistics of amputations as observed at the Newcastle Infirmary, and compared with published accounts. In a continuation of his paper, Dr. Fenwick, in considering the success of an amputation as influenced by the duration of the disease for which it is performed, remarks,]

The maxim has been laid down by an eminent surgical authority, that, in amputations for diseased joints, "the shorter the duration of the disease, and the less the system has suffered under it, the greater is the chance of recovery after amputations, and *vice versa.*" As no facts of any importance are brought forward to verify this assertion, I considered its correctness well worthy of investigation. It would, indeed, seem probable, that if a person labouring under a disease of a scrofulous nature, have less tendency to secondary diseases after an amputation, than an individual in robust health, and the more the strength of a patient be reduced, the less will be his risk from these causes of death, and the only increase of danger he will be exposed to by his debility, will arise from exhaustion. But as in a former table we found that, in practice, but a small proportion died from shock or subsequent weakness, we might, from theory, reasonably feel inclined to call in question the truth of the assertion I have before quoted.

[From a table of amputations performed for diseased knee and ankle joints at the Newcastle Infirmary, classified according to the number of years the disease had existed, the author shows that,—]

Instead of the mortality being less in those cases of amputation in which the disease was of only one year's duration, it is greater in them than in those of any subsequent class. Rejecting the deaths occurring during the first four days as probably produced by shock, we find that 1 in 5.75 died after that period in those whose disease had existed one year, whilst among those who had been affected between one and four years, none perished out of 27. Those who had suffered from disease for more than five years have been classed together, on the supposition that, as in some the complaint had existed for a very long period, the health would probably be but little affected, and that they had required the removal of the limb, rather on account of its inconvenience or deformity, than for the preservation of life. But as we before observed, that the greater number of deaths of persons submitting to amputation, and occurring after the period of shock, was produced by inflammatory or suppurative diseases, it is evident from this table that such patients as have laboured under diseased joints between one and five years, are less liable to be attacked by those complaints after the operation, than others who have been affected either within one year, or for a greater length of time than five years. If these results should be confirmed by other observations, the information to be derived from them will be exceedingly valuable; for it will appear that the impatience of the surgeon will be more generally to be dreaded, than danger from delay. I have seen more than one individual obtain a useful joint, where excellent surgeons had urged the necessity of amputation, and declared recovery without it as impossible; and I have on more than one occasion dissected joints, in which the knife of the operator interfered, whilst nature was safely accomplishing anchylosis. The number of amputations performed for this class of diseases is every year decreasing as more simple and effectual methods of treatment are employed; and we have good reason to hope that, in a few years, the removal of a limb for a diseased joint will be as rare as it was formerly common.

The time required for recovery after the operation seems to have a certain relation to the amount of death; thus, in those in whom the disease had existed only for one year, the time of cure was fifty-six days; in amputations performed upon those who had suffered between one and two years, it was 44.6 days; in those the duration of whose disease was between two and five years, it amounted to thirty-eight days; and of those who had been invalids above five years, it required 53.5 days to complete the cure.

From the above facts the natural conclusion appears to be, that so long as the life of the patient is not placed in immediate danger by his disease, we shall best consult his interest by deferring the operation, since, besides giving him a greater chance of a natural recovery, the amputation will be more successful, and less time will be required to heal the wound in case it be eventually required.

[Dr. Fenwick next enters upon the question of the proper time for amputation after the infliction of an injury. In settling this point, the comparative chance of death in pathological and traumatic amputations should have but little weight; the results of practice alone should be relied upon. Tables of primary and secondary amputations performed at the Newcastle and other civil hospitals and in military practice, are given; and Dr. Fenwick then says,—]

It has always appeared to me, that the mere knowledge of the amount of death following primary and secondary amputations, is not of much importance in enabling us accurately to determine the question of their comparative value. The original point of dispute appears to have been, whether the surgeon would save most lives by amputating a limb immediately after the infliction of an injury, or by deferring the operation to a future period. If, then, we imagine amputation deferred in twenty cases of serious accidents, in which the powers of nature are obviously unable to repair the injury, the question to be decided must be, not so much as to the mortality which will occur amongst those on whom the secondary operation is performed, as the number of the patients who will reach that state in which the limb can be removed. For if a person suffer a compound fracture, or other severe injury, he becomes liable to attacks of phlebitis and visceral diseases, in the same manner as if it had undergone amputation. Some have supposed, that by obtaining the number of deaths which have resulted amongst any number of compound fractures treated without amputation, we might calculate the the proportion which would perish out of an equal number of cases deferred for secondary amputation

But it will be observed that, as the cases of compound fracture treated without amputation are selected as likely to terminate well, they can afford us no guide as to the mortality which is likely to occur from diseases amongst accidents of a more severe character. From the great danger to which every day's experience teaches us, severe accidents are liable before secondary amputation can be undertaken, the conclusion is manifest, that we cannot be justified in deferring the operation, where the powers of nature will be evidently unable to repair the injury. But, on the other hand, the mortality after primary amputations likewise warns us against being in the first instance, too solicitous to remove a limb, whose injury it is possible nature might repair, under the supposition, that in so doing we place our patient in a state of comparative safety.

We have before seen that different diseases appear at different periods after the performance of an amputation, and that the occurrence of inflammatory complaints is chiefly to be dreaded in persons whose strength has not been reduced by long-continued disease. Experience also teaches us, that during the first three weeks after the infliction of a severe injury, as a compound fracture of the leg, the same disposition to visceral and inflammatory diseases is manifested, and that the amputations which are performed during that period are exceedingly unsuccessful. After, however, the suppurative stage has commenced, amputation may be resorted to, with a chance of success approaching that of the operation when performed for a long-standing disease.

[After giving a table showing the difference in mortality between what he calls "intermediary" and secondary amputations, the author goes on to say,—]

The difference in mortality is here very striking, and shows most distinctly the greater chance of recovery of a patient after an amputation performed during the suppurative stage. We here find a ready explanation of the discrepancies of various authors, with respect to the amount of death after the delayed operation; for where a surgeon makes it a practice only to amputate in the secondary period, that is, after the twenty-first day, his success is certain to be vastly greater than another, who attempts to save his patients by having recourse to the operation in the intermediary period, when inflammatory complaints are so apt to occur:—the former may be able to boast of only one death in six of those in whom he removes the arm, whilst the latter may be compelled to allow an average mortality of one in 1·83 after the performance of the same operation.

It is likewise remarkable how slight is the difference in the intermediary period between the mortality after amputations of the thigh, and that occurring after those of the arm; whereas in the secondary period the difference is very observable; showing that in the former the danger from any operation is so great, that the amount of a limb removed has but comparatively little effect upon the result. The obvious conclusion from such a fact is, that we should avoid the performance of any operation upon a compound fracture during the first three weeks after an accident, providing it can be safely deferred until the suppurative stage has commenced. Table X shows us the most frequent causes of death after the primary and secondary operations. It is there seen, that whilst in the former the chance of fatal shock, exhaustion, and secondary hemorrhage is less, the liability to secondary inflammations, as phlebitis and erysipelas, is considerably greater. In visceral inflammations, the danger from both is, however, nearly equal, which most probably arises from the operations performed during the intermediary being classed along with those which took place in the secondary period. Gangrene produces death, as might be expected, more frequently in the primary operations.

Mr. Alcock has given us the following account of the causes of death, of amputations performed in his own practice, classified according to the period at which the operations took place. In the primary amputations, the average mortality from shock was one in fifty-seven; in the intermediary period, none died of twenty-seven cases; whilst of the cases of amputation performed after the twentieth day, one out of every 8·66 sank from exhaustion or shock. Thus, of all the classes of amputation which we have hitherto examined, that consisting of the operations performed after the twentieth day after the receipt of a severe injury, incurs most risk from shock; and herein is the character which most distinguishes the mortality following secondary amputations, from that observed after amputations for long-standing diseases.

Again, whilst in Mr. Alcock's practice, in the primary amputations one case in every 9·5 was affected with phlebitis, and one in every 3·56 with visceral inflammations or abscesses, and whilst of the intermediary operations one in nine suffered from the former, and one in 5·4 from the latter diseases, no death occurred amongst twenty-six secondary operations from these causes. On the other hand, according to the same author, one in every 6·5 amongst the secondary amputations perished from hectic or exhaustion following some time after the operation, whilst none amongst either the primary or intermediary classes sank from these affections. These facts most strikingly confirm the view formerly given, with respect to the necessity of antiphlogistic treatment after primary amputations, and show us that the more the patient is reduced previous to the operation, the less danger is there of his becoming affected by those serious secondary inflammations which cause so much of the mortality observed after the performance of this operation on healthy individuals.

But a question has been raised with respect to the time after an accident at which it is proper to perform a primary amputation; whether the limb should be removed whilst the patient is in a state of depression, or the operation be delayed until reaction take place. Common sense, as well as the results of experience, decides the matter at once in favour of the latter plan; and I have seen, I believe, many deaths occur after amputations, from the shock of the operation being inflicted whilst the patient was suffering from that of the accident. Table XIV. shows us that the chief mortality within the first four days after amputations for accidents, is in the thigh operation; it is, therefore, necessary to remember, that in all amputations at this part, on account of the operation itself inflicting a greater shock on the system than when performed elsewhere, a larger interval of time should be allowed to elapse between the receipt of the accident and the application of the knife.

[Some interesting facts are next adduced respecting the comparative success of circular and flap amputations. The statement given by Dr. Fenwick is only approximative; but it shows that at the Newcastle Infirmary, except after amputations performed for ulcers and malignant diseases, the advantage is on the side of the circular. This is contrary to the usual supposition, but it is supported as far as amputations of the leg are concerned, by the statistics of Mr. Alcock and Dr. M'Hardy. These gentlemen, however, find that in amputations of the thigh and arm, the success of each method is about equal; while in the forearm, the flap operation is the most successful.]

It has been before seen, that phlebitis and purulent deposits constituted by far the most fatal class of diseases occurring after amputation; the comparison, therefore, of the liability of a number of persons to these affections, after submitting to the different methods of operation, is highly important. Dr. M'Hardy, out of one hundred and sixty-five flap amputations, gives twelve cases of phlebitis as having occurred, or 1 in 13.75; whilst, of one hundred and ninety-nine circular, only nine were affected with it, or 1 in every 22.11. Again, Mr. Alcock states, that out of eighty-seven circular operations, ten died of phlebitis, or purulent deposits, or 1 in every 8.7; whilst, of twenty-four flap operations, six perished, or 1 in every four, from the same class of diseases. Taking, then, the general amount of death as caused by these diseases, the advantage is vastly in favor of the circular operation; or, if we confine our attention only to the primary amputations, Mr. Alcock informs us, that of this class, after the circular operation, 1 in 6.5 died of phlebitis, or purulent deposits; whilst, after the amputations, 1 in 3 died of phlebitis, or purulent deposits. If we investigate the frequency of their occurrence, with respect to the site at which the amputation is performed, we find a somewhat different statement. According to Dr. M'Hardy, 1 in 24 was attacked by phlebitis when the arm was removed by the flap, and none out of twenty seven cases of the fore-arm amputation when the flap method was employed; whilst, after the circular operation, 1 case of phlebitis took place in every 10 when it was performed in the former situation, and 1 in every 26—when in the latter. The comparative liability of the two classes of operation to phlebitis, is reversed in the lower extremity. In the thigh operations, according to the same writer, the employment of the flap was followed by phlebitis once in every 12.75 cases, and, in the leg, once in every four operations; whilst, after the circular, 1 in every 33.33 was attacked by the same disease when the amputation took place in the former site, and 1 in every 21.5 when it was performed in the latter.

These are very important statements, as displaying the greater chance of the occurrence of this formidable disease in the most dangerous amputations, when they are performed by the flap operation. The liability to secondary hemorrhage is about equal after both plans of operation. Thus, according to the author last quoted, in the flap amputations 1 in 12.68 was affected by it; whilst in the circular one, 1 in 13.26 suffered from the same accident; and in Mr. Alcock's practice, after the former method 1 in every 6, and, after the latter, 1 in every 5.4 was affected by secondary hemorrhage. As, however, this accident seldom proves fatal, excepting after the thigh operations, we should chiefly direct our attention to the chance of its occurrence after removal of this part. Dr. M'Hardy gives nine cases of it as having occurred out of a hundred circular, and nine out of one hundred and two flap amputations of the thigh. We need not, therefore, consider the liability to secondary hemorrhage as affording any argument against the employment of either the one or the other method of operating.

But if the circular operation is less exposed to the occurrence of phlebitis, there can be no doubt that the advocates of the flap can bring forwards greater rapidity of execution, better stumps, a less liability to necrosis, and a shorter time of cure, for their favorite operation. With respect to the last of these advantages, Dr. M'Hardy found that 1 stump in every 4.73 heals by granulation after the employment of the circular; whilst, after the flap operation, only 1 in every 7.85 did not unite by the first intention.

The question, then, which it is necessary to settle, before determining which description of operation we will perform upon any particular case, appears to be, whether the advantages of a better stump, and a quicker recovery, are sufficient to outweigh an increased liability to phlebitis. In amputations for diseased joints, in which phlebitis and secondary inflammations are of comparatively rare occurrence, and in which necrosis and conical stumps are, according to my own observation, most likely to take place, the flap operation appears, in most cases, to be indicated, more especially if the part to be removed be the upper extremity, or the patient be young. On the contrary, in traumatic amputations of the lower extremity, the circular operation would seem most advisable, as, in such cases, plenty of covering can be always obtained for the ends of the bones, whilst, at the same time, we subject the patient to a less danger of phlebitis and secondary inflammations than by the other method. It seems somewhat strange, that, notwithstanding the long disputes upon the merits of these different plans of amputations, so few facts should have been collected; and I fear we shall have to wait for more detailed and accurate investigations, before we can venture fairly to decide upon their respective merits.

[Dr. Fenwick finds that the sex of a patient, *per se*, has little or no effect upon the issue of amputation; but that the influence of age on the contrary, is very great. He says:—]

It is pretty evident, and the opinion is supported by the study of other operations performed for diseases, that whilst amputations for disease are most successful when performed on persons between 5 and 20 years of age, the chance of recovery of those under 5 years of age is comparatively small. It should be also remarked, that the increase of mortality in this class of amputations is not gradual; but that, after a certain period, what had been at a previous age an operation of but small hazard, gradually assumes a most severe character. The turning point is in these British Hospitals at twenty years of age; but in the Newcastle Infirmary the mortality does not become excessive until after 30, when the amount of death which had been up to that age, so dissimilar in the Glasgow and Newcastle Infirmaries, becomes afterwards more closely approximated. After the age of 30, the mortality seems as a general rule gradually to increase in all the hospitals, until the commencement of old age, when the danger usually becomes less; a smaller amount of death having occurred, both in the French hospitals and at the Newcastle Infirmary, after 70 years of age, than had been observed in the period immediately preceding that advanced time of life.

In cases of amputations for diseased joints in the lower extremity, the increased mortality, after 30 years of age, is exceedingly striking; for of thirty-two cases of amputation performed on persons above that age, nine perished, or 1 in every 3.55, whilst of sixty-six of those under that time of life, only three died, or 1 in 22. After 50 years of age the mortality becomes less than in the twenty years before that time; so that in persons between 30 and 50 years of age, the amputations for diseased joints in the lower extremity have been least successful. How carefully, then, should we in these operations consider the time of life at which our patient has arrived before pronouncing a favorable prognosis. The mortality in the second week after the operation shows us, that it is in the occurrence of a less amount of secondary inflammations that the superior success of early and extreme age consists.

If we compare the average mortality during the second week after amputations for diseased joints, in persons between 30 and 50 years of age, with that occurring in the same period of life in traumatic amputations, we shall discover but little advantage to arise from the circumstance of the disease having previously existed; the mortality after the first week being, in the former class of amputations, 1 in 3.55, whilst in the latter it is 1 in 2.83. That the time required for cure also increases with the age is worthy of remark; each period between 10 and 50 years of age being marked by a very gradual increase, whilst below and above these periods the difference is very considerable.

Amongst amputations of the lower extremity performed for other diseases a different law of mortality may be observed; and this we might be led to expect, on account of the subjects of the operations of which it is composed, not having been so much reduced by disease as those cases from which the other side of the table has been formed. Amongst the other pathological amputations, the usual comparatively small amount of death from secondary disease in persons below twenty years of age is observable; but in the succeeding period, in which, amongst amputations of diseased joints, we remarked the mortality to be still comparatively small, we here find it to have risen to an equality with that of the most fatal age. It is curious that, amongst these amputations, the time of cure is as great below 20 years of age as at any future time, therein differing from the results obtained by the analysis of cases of amputation performed for diseased joints.

In Table XXXV, I have classed together all the pathological amputations of the upper extremity, the numbers of the operations performed for each disease being too small to admit of their separation. No regular increase in mortality corresponding with the age can be remarked. The fact, that only 1 out of 8 of these cases of amputation who were above 50 years of age died, whilst 1 out of 4.5 perished who were between 20 and 50. is valuable with reference to the operation of resection of the elbow joint. It teaches us to perform the latter operation during the earlier periods of existence, as there is both a greater chance of its being successful, and a less probability of recovery if amputation be resorted to: on the other hand, after 50 years of age, the hazard from the amputation decreases, whilst the danger from the removal of the joint becomes greater. It is worthy of observation, how slow the wound is in healing, below 20 years of age, amongst pathological amputations of the upper extremity; and, however inexplicable the fact may be, it will be seen, by examining Tables XXXIV and XXXVI, that at this early period of life, although the mortality is usually small, yet the time required for cure is generally higher than at any other period.

As former Tables have shown how great is the difference in the mortality between 20 and 30 years of age, according as we investigate it in the class of amputations for diseased joints, and in these amputations which are performed for accidents; so, in Table XXXVIII, we find that all the deaths at that period of life had occurred amongst those who for the shortest time had suffered from disease. It will be advisable, therefore, in persons between 20 and 30 years of age laboring under incurable diseases of the joints, to delay the performance of amputation as long as the strength and other circumstances of the patient will permit, instead of resorting at an early period to the operation, on account of there being but little prospect of a natural recovery. In that time of life which, in amputation for diseased joints of the lower extremity, is most fatal—viz., from 30 to 50 years of age—we find also, that an amputation succeeds better if the disease has existed from one to five years, than if the operation be performed at an earlier stage of the disease.

In analysing the causes of death in secondary amputations, it was found that, whilst the patients undergoing that operation were not so liable to inflammatory affections as those suffering amputation immediately after receipt of an accident; yet, that they were more likely to sink from exhaustion than cases of pathological amputation, and that this, in fact, constituted the chief danger of the amputation when performed at a considerable distance of time from the accident.

From this we might be led to conclude, that the period of life in which the reduction of the strength of the patient by disease has the greatest effect in preventing subsequent inflammation, and, at the same time, that period in which the greatest power of resisting shock existed, we should find the most favourable for the secondary amputations; and this supposition Dr. Lawrie's statistics confirm. Between 20 and 30 years of age, no deaths occurred out of seven secondary amputations; whilst before that period, in which we found, by a previous table, shock had so deadly an influence, seven died out of thirteen, or 1 in every 1.85. Between 30 and 50 years of age, during which death most generally occurs from secondary inflammation, whether the operation be performed for traumatic or pathological causes, twelve died out of sixteen cases of secondary amputation, or 1 in 1.33; whilst. beyond 50 years of age, of eight cases, six also died, or 1 in 1.33. From 20 to 30 years is the age. then, at which we gain most by deferring, for the longest time, an amputation for an accident, both because the reparative process is most active at that period, and therefore there is a greater chance of a natural recovery, and also because there is less danger than at other times of life of the patient sinking from exhaustion immediately after the operation; whilst, by the continuance of suppuration, the chance of the secondary inflammations to which that age is liable after amputations, is removed. In patients below 20 years of age, we should remove the limb at an earlier period if there seems but small probability of a natural recovery from the accident: because there is less power in persons of that time of life of surviving the shock of the amputation, if it be long deferred, and we gain less in other respects by delay, on account of the small chance of the occurrence of phlebitis, or other secondary inflammations, after the amputation, when performed on persons of that early age. But the question arises. at what age are persons suffering compound fractures of the limbs least likely to reach that period when amputation can be safely employed? From an analysis of a number of such accidents to the lower extremities, recorded in the operation books of the Newcastle Infirmary, I find, that of persons below 20 years of age, three died out of twenty-four, or 1 in 8, within the fourth and twenty-first day after the infliction of the *injury*. In none of these, therefore, could any chance of a favourable result, after amputation, have existed, otherwise that operation would have been attempted. Of twenty-two cases of compound fracture between 20 and 40 years of age, four died, or 1 in 5·5; whilst of twenty cases who were between 40 and 60 years of age, two perished, or 1 in 10; and of four persons above that time of life, none died. It should be, therefore, borne in mind, in attempting to save a dangerous case of compound fracture of the leg without amputation, when the person is between 20 and 30 years of age, that there is less chance of a patient reaching the period of suppuration, when secondary amputation, if required, is most successful; although, if that operation can be performed, there is greater probability of recovery than if it were performed upon a person below 20 years of age.

In persons between 30 and 40 years of age, I should imagine the attempt to save a compound fracture of the lower extremity was exceedingly hazardous, both on account of their liability to the secondary inflammations which are apt to follow the accident, and also, because, if the secondary operation be permitted, the chance of recovery after the amputation is so small. As the amount of fatal disease between the fourth and twenty-first days after compound fractures has been so much smaller in persons between 40 and 60 years of age than in those of the period immediately preceding that time of life, we must either suppose that the surgeons of the Newcastle Infirmary had amputated a large number of the worst cases who were at this time of life, which they would have attempted to have saved if their ages had been less; or otherwise, that persons of that age suffering severe accidents, are really less liable to fatal diseases between the fourth and twenty-first day after a compound fracture, than those between 20 and 40 years of age. But, from whichever of these causes this small amount of mortality has arisen. it is evident that accidents of greater severity. occuring in persons between 40 and 60 years of age, may be more safely deferred to

the suppurative stage than is usually imagined. And, although the m
lity in the case of secondary amputations above 50 years of age, is
1·33, yet we have found, by Tables XXXVI and XXXVII, that an eq
excessive amount of death takes place amongst those at that time of
who undergo the primary operation, when performed on the lower e
mity; whilst in the class of diseased joints, to which secondary amputa
are most similar, the number of deaths is remarkably small at that
In order, however, to settle points of this importance, we should have
numbers of carefully observed and minutely classified cases, both of a
tations and of compound fractures; for, I believe, there are few inve
tions more likely to prove useful than those which can be made rega
the age at which we may most safely treat a compound fracture wi
amputation.* *Monthly Jour., Dec. 1847, p. 404; Jan., 1848, p.*

77.—ON THE NECESSITY OF PREPARATORY TREATMENT, BEFORE RATION.—By Bransby Cooper, Esq.

[Mr. Cooper strongly insists upon the necessity of well ascertainin
state of a patient's health, as to the absence of organic disease, the c
tion of the bowels, state of the urine, &c., before undertaking an ope
We are often tempted to perform slight operations at the moment, bu
dangerous to do so, especially as to operations on the head and face
cysted tumours of the scalp for instance. On this subject, Mr. C
says:]

Several years ago I removed an encysted tumour from the head of
tient. Upon making a mere incision through the skin it immed
turned out, the operation of extracting it not occupying more than
nute. On the third day I considered my patient convalescent; on the
I was suddenly sent for to see him, and found that a most startling c
had taken place in his condition. I should not have recognized hi
head was swollen to twice its natural size; not a feature could
cerned; and his complaints were urged in muttering delirium. I im
ately ordered him (as his bowels were costive), a large dose of calom
mented his head and face, punctured the scalp, and prescribed diap
effervescing draughts. The day following he had but slightly imp
although his bowels had been freely opened, and I immediately prop
consultation. The gentleman who met me recommended bleeding
medy to which he especially trusted in all cases of febrile action.
the patient had a very dry tongue, attended with delirium, and wa
plaining of great thirst, muttering in most inarticulate sounds his de
porter, I proposed that we should try its effect: this was consented t
I held a pint of porter to his lips, he drank it off at a draught—soon
into a sound sleep: when he awoke he was perfectly free from de
and from that moment his recovery rapidly progressed. In relati
case, I do not mean to inculcate the propriety of the invariable use
mulus, but I do believe that in most cases it will be found a safer
than bleeding, more particularly in London or any crowded city; not
formed this judgment from the solitary case just mentioned, but
opinion founded upon my own experience and the practice of my col
in this hospital as well as in private.

A lady applied to an eminent surgeon, to ascertain from him wh
a small encysted tumour could be removed with perfect safety f
head; to which he replied, "certainly:" the operation was imm
performed, but seven days afterwards she was dead from an attack
sipelas. The next case, as the patient was not attacked by erysipe

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* The reader will perceive that we have in our abstract of these valuable pap
the reference to the different Tables, but not the Tables themselves. For the
of information the reader will be well rewarded by referring to the Journal itse

the operation, may be considered out of place with regard to our present considerations; I have mentioned it, however, merely to exemplify the necessity of ascertaining the real constitutional condition before you venture to submit a patient to any mechanical lesion.

A short time ago, an individual came under my care with an external pile and a fissure in the mucous membrane of the rectum; he was considerably out of health, and attributed all his ailments to the sufferings he experienced in the passing of his motions, owing to the local disease: he urged me to relieve him by operation. I kept him, however, a week or ten days under my care before I operated, and by soothing remedies had somewhat improved his condition, when I removed the external pile, and drew the bistoury across the fissure, the whole time of the operation not exceeding half a minute. The patient felt immediate relief after the operation, he had little or no pain in passing his motions, but in the course of four or five days he was seized with symptoms of subacute peritonitis: calomel and opium, and leeches, were ordered, but four days afterwards he died.

Upon examination of the body, he was found to be the subject of granular kidneys, (the morbus Brightii,) which no doubt had caused his death. It had been ascertained, during life, by my dresser, that his urine was albuminous: but I considered the severity of his suffering demanded the performance of this slight operation: although the sequel renders it a matter for consideration whether I was right, under these circumstances, in subjecting him to a fresh source of irritation.

From such cases as these you must be impressed with the necessity of doing everything which the science of surgery can insure, so far as lies in your power, to place your patient in the greatest state of security before you subject him to any surgical operation, and even then never promise that any operation, however simple, will be perfectly free from danger, for depend upon it, it is as unwise to treat slightingly the most trifling incisions of the skin, as it is dishonest to attach to an operation more importance than it justly deserves.

Some surgeons suppose that it is better to perform what are usually considered simple operations at the moment, than to allow the dread of anticipation to remain on the mind of the patient, and then proceed to act upon this opinion without any preliminary precaution. There are, however, I believe, but few patients who will not duly appreciate the cautious recommendation of a surgeon to submit to some little preparatory discipline, and he will gain much more confidence from the patient by this display of judgment, than from the hasty recklessness which evinces boldness and self-reliance, rather than judicious precaution.

Med. Gaz., Nov. 12, 1847, *p.* 825.

ORGANS OF CIRCULATION.

78.—ON TUMOURS OF THE NECK CONNECTED WITH BLOODVESSELS.

[Some years ago Mr. Liston punctured a tumour in the neck, from which considerable hæmorrhage occurred, and which the operator then supposed to be an abscess in communication with an artery. Professor SYME has published the account of a similar case in which he tied the artery, but after death the tumour was found not to communicate. Mr. Syme says:]

About a month ago a young man called upon me to get my opinion of a swelling in his neck. It was seated on the right side, and occupied the upper triangular space. It was of an oval form, quite circumscribed, and obviously consisted of a bag containing fluid. Upon more particular examination, I found a distinct pulsation of the kind which I had been accustomed to regard as characteristic of aneurism, being an expansive impulse, not limited to a portion of the tumour, but felt equally at every accessible

point, even from the mouth, and more especially in a lateral direct
The patient stated that the swelling had commenced about nine mo
ago—and had progressively enlarged without any cause that had been
certained. He also stated, that when he worked hard. or walked fast,
tumour increased in size, and had a strong beating in it. I felt satis
that there was an aneurism of the carotid artery, but expressed no opi
at the time, and desired the patient to call again for further examinat
When he did so, I varied the process by placing him in different positi
—by trying the effect of pressure on the tumour and artery—and by lis
ing to the sounds of the tumour. There was no distinct aneurismal "br
but a very strong loud pulsation, that implied the action of the heart u
an extensive surface. Finding my impression thus confirmed, I infor
the patient of my apprehension: but before giving a decided opinion
quested that he would call once more. He did so a few days afterwa
and I then felt fully warranted in informing him that an operation w
be requisite for his relief. Next day he placed himself in my hands for
purpose. After he had been confined to bed for a few days, I tied th
tery below the crossing of the omo-hyoideus, as the tumour prevented
from being done higher up. The textures of the neck were more than
ally adherent, and the vessel was not exposed to view with nearly the s
facility as upon the former occasions which have required me to per
the operation. I nevertheless succeeded without any tearing, or u
disturbance of the parts, in passing and tying the ligature, so as to re
me from the slightest apprehension of any bad consequences. The tu
immediately sustained a very distinct diminution of bulk, which wa
marked not only by the gentlemen present, but by the patient. He
on most favourably after the operation until the fifth day, when hæ
rhage took place from the wound, and notwithstanding every effort to
prevention, recurred from time to time until the evening of the twelfth
until it proved fatal.

The parts concerned were examined next day in the presence of Drs.
Duncan, Mackenzie, Peddie, Brown, Gillespie, and Ballingall.

We found a tumour, extending from the ear to the extremity of the
hyoideus, and completely occupying the upper triangular space of the
At the lower part it seemed to terminate in the sheath of the vessels,
looked like a prolongation of it downwards, but was found to be in
enveloped by the bag, which I dissected out entire from the coats o
vessels to which it had intimately adhered. The cyst, when opened
found to possess a tough consistence, and to contain a fluid like thin
At the posterior part, when viewed internally, it displayed a saccula
honeycomb looking structure.—*Edinburgh Monthly Journal.*

[Another case has been reported in which a large abscess in the
(treated by a quack) had not been opened, but allowed to go on till it
by several openings. When the discharge had gone on for about a n
alarming and repeated hæmorrhages took place from the openings.
death,]

The blood-vessels were injected, and it was found that ulceratio
occurred in the subclavian artery, as it lies upon the first rib. The ri
in a carious state, as well as the bodies of the contiguous vertebræ.
situation of the ulcerated opening in the artery was towards the bon
occupied about one-fourth of the calibre of the vessel; the opening
oval shape, and well defined. There was no enlargement of the ca
of the vessel at the point. *Lancet, Feb. 5,* 1848,

79.—EXTIRPATION OF NÆVI BY LIGATURE.—By J. Luke, Esq., Surgeo
London Hospital.

[Mr. Luke proposes a method of destroying nævus, aneurism by tumor, or, as he terms it, "capillary aneurism." which presents some advantages over the ordinary operations by ligature, one of which is that it can be better applied to large masses. Of this method, he gives the following] description.—To prepare for its application. several needles (straight or curved, as most suitable to the case), are to be threaded upon a very long and strong ligature of dentists' or other silk, and placed upon it so as to be about 12 or 14 inches apart from each other. To avoid the inconvenience of deficiency, the number threaded should be more than are likely to be required in the operation; and must vary, from two or three to any number, at the option of the surgeon. The ligature with the needles on it may be wound round a card, and unwound as it is wanted in the progress of the proceedings. When thus prepared, the operator introduces the needle nearest to the extremity of the ligature, at a point just beyond the limits of the mass to be removed, and having passed it through the integuments to the opposite side, draws the ligature out sufficiently to leave an end for tying when the needle is cut off.

The second needle is then introduced in like manner, about half an inch from where the first was introduced, and brought out at a similar distance from where the first was brought out, and the ligature drawn through also to a sufficient extent to leave an end for tying. The third needle is introduced and brought out in a similar manner, and at a distance equal to that between the second and first. A fourth and fifth, or any other number, may be introduced, and brought out in a similar manner, and at a similar distance until the limits, or rather a little beyond the limits of the disease most distant from that at which the first needle was introduced, have been reached.

When all the needles that may be required have been introduced, they will be found to be arranged in a manner deemed suitable to the case by the surgeon. Those which have been threaded but not used, may be cut off. In introducing the needles which are intermediate between the first and last, care should be taken that they are passed beneath the base of the disease to be removed; for unless this be done, perfect insulation of it will not be effected. To do this more certainly, and with greater ease, the diseased mass should be pinched up between the fingers of the surgeon or his assistant: a proceeding which in capillary aneurism has the effect of emptying the blood vessels, and of diminishing the space which the needles have to traverse.

Having concluded the introduction of the needles, they are to be removed by cutting the ligature near to the eye, by which proceeding a series of loops of ligature are formed, each embracing but a small portion of the mass to be removed. The extremities of these loops are to be tied, respectively with each other, with as much tightness as will be sufficient to stop effectually the circulation of blood through the part included within the knot, an operation which is rendered comparatively easy by reason of the limited quantity of structure included within it. In tying the knots it will be convenient to begin and proceed in the order in which the needles were introduced, until the whole are completed, for thus the probability of entanglement is diminished. As the knots are tied, small portions of the disease are successively cut off from the general circulation, and the whole becomes perfectly insulated, as the knot of the last loop of ligature is drawn tight.

Painful as the application of the ligature in such cases usually is, (and from which painful condition the above described mode affords no exemption). I believe the duration of suffering is shortened by the plan which I propose, in consequence of the more rapidly destructive effect which it produces on the vitality of the part by the perfect stoppage of the circulation which it causes. *Med. Gaz., April* 7, 1848, *p.* 581.

80.—DEATH FROM AIR ENTERING A VEIN IN THE NECK.

[The deceased, a man of the name of William Richards, 39 years of age, applied to Dr. Willis, of Barnes, Surrey, labouring under chronic laryngitis. After treating the case by leeching and blistering for about a fortnight, the introduction of a seton was proposed. Dr. Willis in his evidence before the coroner, gives the following account of the operation, and the accident by which it was accompanied. He says,]

I pinched up the skin with the finger and thumb of the left hand, and immediately thereafter thrust in the seton-needle armed with a strip of lint. The seton-needle used was about the size of a common bleeding lancet. It entered horizontally, about two inches and a half above the breast-bone, and not at all near the jugular vein, or any other important blood-vessel. At the instant of its entrance I heard a slight momentary hissing sound. At first I thought that I had opened a subcutaneous abscess communicating with the windpipe; but almost at the same moment I looked in the poor man's face, and saw that another and far more serious event had occurred —that the rushing of the air was not out from the windpipe, but into some small vein which had been implicated in the operation. The man was deadly pale; his features were set; he fainted, and subsequently became rigid and convulsed. I kept my fingers on the openings, to arrest the farther entrance of air during inspiration. I caught the man and laid him down on the floor.

[In half an hour Dr. Cormack, of Putney, arrived, and it was then determined to bleed the man, who was then rigid, insensible, and almost pulseless. After the bleeding, the pulse became good, and the patient was able to swallow a little wine and water. Warm applications to the feet were also used; and the whole of the treatment had the concurrence of Mr. Syme, who was summoned to see the case. Death took place, however, in rather more than seven hours after the accident. On a post-mortem examination,]

It was found that the jugular veins and the large vessels of the neck were uninjured; that the right auricle and pulmonary artery were distended with frothy blood; and that the lungs were emphysematous.

Med. Gaz., April 7, 1848, *p.* 608.

81.—CURE OF ANEURISM BY COMPRESSION.—By Dr. Bellingham.

[Dr. Bellingham recently related to the Surgical Society of Ireland two fresh cases of Aneurism treated by compression. The first was a soldier under the care of staff-surgeon Humfrey, with a femoral aneurism: Read's aneurism-compress was applied, and at the end of thirty-three hours, pulsation had ceased, and never returned. The second was a case of popliteal anerism, under the care of J. Tufnell, Esq.; it was cured in sixty days. Within the last five years there have thus been thirty cases of aneurism, five of which were femoral and twenty-five popliteal, treated by compression. After relating the cases, Dr. Bellinggam remarked,]

It has been repeatedly and frequently urged against the treatment of aneurism by compression, that it is not only a much more tedious procedure than the ligature, but that it is also much more painful. There can be no doubt that if this method is undertaken by a surgeon who is ignorant of the manner in which compression effects the cure of aneurism,—who does not understand how to regulate the compressing force,—who is not aware of the degree of pressure necessary, or where to apply it most advantageously,—and who is not provided with the proper instruments for making compression,—the treatment will prove both tedious and painful, and we cannot wonder that it should fail in such hands; and the few cases which have been put forward with the object of deterring surgeons from using compression, present a sad contrast in this respect to the two just detailed. In

Mr. Humphrey's case, for instance, compression for thirty-three hours was sufficient to cure the disease; in five days the patient was walking about, and in five more he left the hospital, the use of the limb being perfect—a period at which, if the operation had been performed, and everything had gone on satisfactorily, the patient would still have been exposed to the risk of ulceration of the artery and secondary hemorrhage. In Mr. Tufnell's case, in which the disease was of longer standing the sac of a larger size, the patient of intemperate habits, having recently had the venereal disease, and the treatment conducted under all the disadvantages of a crowded lodging, where the regulation of the compressing instruments must have been left in a great measure to the patient himself, the treatment, notwithstanding, lasted only for six days, and the patient in that comparatively short period was perfectly cured of a painful and dangerous disease. I cannot help, therefore, saying, that any surgeon, with such powerful evidence in favour of compression as these two cases afford, coupled with the previous evidence in its favour, who would expose his patient to the pain and risk of the operation in popliteal aneurism, or in femoral aneurism low down, would, to use a mild expression, be exceedingly culpable.

There are one or two points connected with the foregoing cases worthy of further remark. The first is the relief from pain which the second patient experienced when the compressing instrument was applied, and the return of pain when the pressure was removed; evidently owing to the stretching and compression of the parts about the aneurism being taken off when the blood was prevented from entering the sac in a full stream; and showing that when an aneurism is large and produces much pain, compression really relieves this pain, and its application affords so much ease to the patient that he willingly maintains continuous pressure.

The second is the occurrence of severe pain, and of an unusual character, in the parts about the aneurism at the period that the pulsation ceased. This fact has been frequently mentioned in the details of the cases of aneurism treated by compression hitherto recorded, it was very well marked in both the cases just read, particularly in the second.

I am of opinion that this pain is caused by the *sudden* enlargement of the collateral vessels, which ensues when the artery is obliterated at the point from which the aneurism springs, by which the neighbouring parts are necessarily also compressed, particularly the nervous twigs which accompany these arterial branches; because this pain does not set in until immediately before the pulsation finally ceases in the aneurism; because at this period we first detect pulsation in the articular arteries or other anastomosing branches; and because this pain subsides of itself after a time, as the new circulation becomes fully established. That the collateral vessels about the knee do not enlarge in popliteal aneurism until the aneurismal sac is filled up, and the artery at the part is about to be obliterated is proved by their pulsation being detected first at this period; yet if we consult works upon surgery, we should be led to suppose that nothing was more easy than to bring about the enlargement of the collateral vessels; indeed, compression was formerly recommended by writers on aneurism with this object, as a preliminary step to the operation, by which they supposed the chances of success of the operation would be increased. But as the writers of the period to which I allude had not clear ideas respecting the mode in which the ligature effects the cure of aneurism, and were entirely ignorant of the manner in which compression brings about this result, we may be excused for not admitting their conclusions respecting the enlargement of the collateral vessels.

As there seems, however, to be still some misunderstanding or some difference of opinion with respect to the exact mode in which compression effects the cure of aneurism, I shall avail myself of the present opportunity to make a few observations upon this point. It is obvious, first, that whatever mode of treament may be adopted, unless the sac of an aneurism becomes completely impervious to the entrance of blood, the disease will not be cured. It is also obvious, secondly, that an aneurismal sac to be impervious to the entrance of blood must become solid: that is, must be filled up with solid matter. Thirdly, an external aneurism to be perfectly and permanently cured must not only become solid, but the artery at the point from which it springs must be obliterated. These objects are fulfilled, as well when a cure is effected by compression upon the artery between the aneurism and the heart, as when the ligature is successfully used, or when the cure has been brought about by nature's unaided efforts.

Dublin Med. Press, Dec. 1, 1847, *p.* 337.

82.—DESCRIPTION OF A NEW TOURNIQUET.—By H. V. Malan, Esq.

The following is the description of the instrument:—A smooth piece of brass forms the main part of the tourniquet; it is 2 inches 7-8ths long, 1 inch 2-8ths wide, and is flat one way, but has a slight curve in its length of 2-8ths of an inch, in order to make it fit closer on the limb; it is 2-8ths of an inch thick on the sides, being hollowed out in the centre for the easy action of the band. At each end are two cylindrical rollers, each 2-8ths of an inch thick; the outside one is about 1-8th of an inch apart from the inside one, which stands about 1-16th of an inch from the smooth edge of the main piece itself. The ends on which the rollers are fixed are 5-8ths of an inch long, so that the inside of the piece of brass measures 1 inch and 7-8ths.

Two small pieces of brass, of the same thickness and width as the main piece, serve as female screws; they are quite independent of the other parts, and only kept together by the spindle of the male screws, and with the other parts of the instrument by the band. Each of those pieces of brass is 1 inch 2-8ths long, and 6-8ths of an inch wide, and 3-8ths thick. The lower part of it, that which rests on the main piece, carries a cylindrical roller similar to the others, and the upper part is the nut of the horizontal screw.

There are two screws on the same steel spindle, and each screw is double. The spindle on which they are is 3 inches and 3-8ths of an inch long; the screws 3-8ths of an inch in diamenter. On one half of the spindle the double screw runs from right to left; on the other half, from left to right, so that both screws meet in the centre. By this arrangement the two female screws are drawn with double force and double rapidity towards each other by the turning of the spindle: five turns being only requisite to make them move from both extremities, and meet in the centre of the instrument. A small peg driven across the square end of the spindle prevents their escaping off the screws.

Each end of the spindle is cut square, so as to fit exactly in a key which is removed, when the tourniquet is fixed. The tenon or square end of the spindle is 3-16ths of an inch wide, and about 2-8ths of an inch long, so that the screws and spindle measure from one end to the other 2 inches 6-8ths of an inch. The cylindrical end of the key which fits on the spindle is 4-8ths of an inch long; the thumb piece 1-8th thick, 4-8ths wide, and 1 inch 3-8ths long. The band, pad, and buckle, are made and used the same way as in all other tourniquets. Thus the band passes under the outside cylindrical roller of the main piece of the instrument, round the one of the female screws, under the inside one of the main brass piece, under the main piece itself, and at the other end in the same manner. A wooden pad is made to slide on the band, at the extremity of which a buckle is fixed.

As the key can be adapted to either end of the instrument, it can be placed on either side of the limb, below or above as required. The instrument, as a single glance will prove, is simple and strong; it can be put on, fixed, and tightened, with little trouble or effort on the part of the operator; and owing to its two double screws, with much power and rapidity. The compression is especially made on the blood-vessel, by means of the pad; and its very construction makes it lie low and close to the limb, so that not only it cannot be upset by the sudden collapse of the muscles after the amputation, but can be used in any position, or applied to any part of the body; and is not in the way of any garment slipped over it. It is compact, small, and safe. As the key may be removed when the instrument is once fixed, no patient can in any case free himself from its grasp.

Med. Gaz., March 31, 1848, *p.* 563.

ORGANS OF RESPIRATION.

83.—ON ŒDEMA OF THE GLOTTIS FROM SWALLOWING BOILING WATER, &c.—By Dr. JAMESON, Surgeon to Mercer's Hospital, &c.

[In the following observations Dr. Jameson principally directs our attention to the indications for tracheotomy when boiling water has been swallowed, or attempted to have been swallowed, and to the circumstances to be attended to in the performance of this operation. He says,]

In all cases where boiling water has been taken, or attempted to have been taken, into the mouth, the danger at all times is imminent; for although the little patients seem to suffer comparatively very little for the first few hours, still symptoms of grave importance set in, sooner or later, which, if not combated by appropriate treatment, will either kill the patient or call for the operation of tracheotomy. The operation is, therefore, I think, imperatively called for, when the usual remedies, such as emetics, leeches, and the application of heat to the surface, &c., fail in allaying the urgent symptoms. But when the breathing becomes stridulous and croupy, or amounting to a mere pant, from spasm to the glottis, the pulse quick and small, the temperature of the body diminished, the head drawn back, face congested, eyes half open, inclination to coma, and difficult deglutition, I should, on the first accession of those symptoms, at once be inclined to operate; but when these have lasted a sufficient length of time to cause complete coma, or if bronchitis or laryngitis has set in, then, I think, it will be found useless; for when patients under such circumstances die after operation, provided it is not produced by the shock inflicted on the nervous system, it is from the accession of bronchitis, laryngitis, or pneumonia; consequently, if any of these exist before we operate, we can entertain but small hopes of recovery.

In reply to the second proposition,—whether they ever get well without the operation being performed?—I need not dwell upon it, as we all know they do, in proof of which I have adduced one case out of many that have come under my observation. But the fact is so well known to all practitioners, I shall dismiss the further consideration of it, and proceed to our last proposition, viz., the instruments required, the circumstances to be attended to in its performance, and the subsequent treatment to be adopted. The instruments necessary to be provided with, in addition to the ordinary scalpel, scissors, forceps, and retractor, are, a trachea pipe, a gum-elastic catheter, and a small double hook; the latter I think a much more convenient instrument for laying hold of the trachea than a single one, or any other contrivance. The circumstances to be attended to in its performance are:

1st. The operator should bear in mind that his cutaneous incision be in the median line, otherwise the opening into the trachea will not correspond to it, a valvular opening being the result.

2nd. Great caution is required in avoiding the thyroid veins, which, as well as the middle thyroid artery, constantly encroach on the median line.

3rd. Great caution is required that the incision be not carried too low in the neck, thereby opening the fascia that is attached to the sternum, which helps to close the upper opening of the thorax, like a lesser diaphragm, whereby there is not only danger of wounding the vena innominata, but also great annoyance may be experienced in the subsequent steps of the operation, by the elevation and depression of the thymus gland.

4th. We should never open the trachea till we are certain that we have laid open the deep fascia that covers it, or we will surely have a valvular opening.

5th. The operator should be prepared, in case of the supervention of spasm, when the trachea is seized by the hook, to cut the piece out rapidly; or should the patient not breathe instantly after this has been done, the surgeon must lose no time in passing a gum-elastic catheter into the trachea and inflating the lungs.

6th. We should never enlarge the wound in the soft parts after the trachea has been opened, lest a flow of blood should pass into it, and cause the instant death of the patient.

7th. Blood may pass into the trachea the instant the opening is made into it, thereby producing violent cough, or even to such an amount as to asphyxiate the patient. In either case the elastic catheter must be had recourse to, and life may be saved.

8th. Should a lymphatic gland present itself along the course of the incision, and tend to obstruct the passage of air into the trachea, it may be removed without danger.

The subsequent treatment to be adopted is simple. Immediately after the operation, as the patient is generally in a more or less collapsed state, we should give small doses of warm wine and water, or camphor mixture; we ought also to place him in a warm bed with hot jars around him, and have a warm temperature kept up in the room.

When reaction sets in, small and repeated doses of calomel, in combination with James's powder, ipecacuanha, or tartar emetic should be given. If diarrhœa occurs, hydrargyrum cum cretâ with Dover's powder should be administered; or, if this will not check it, we may try small anodyne injections. But the principal danger to be dreaded, and which is chiefly to be guarded against and combated, is that arising from bronchitis, laryngitis, or pneumonia; and I know nothing more likely to keep off their approach than inhaling a warm atmosphere, in conjunction with the use of calomel. If, however, any of these symptoms set in, they must be met by the ordinary measures used in such cases. *Dublin Quarterly Journal, Feb.* 1848, *p.* 79.

84.—A CASE OF SHEEP'S TOOTH IN THE BRONCHUS.—By J. RAYNER, Esq., Stockport.

[A girl, seven years old, was admitted into the Stockport Infirmary, having swallowed a sheep's tooth nine days before. It was found, on examining the chest, that respiration in the right lung was completely prevented.]

A consultation was therefore called, and the operation of tracheotomy determined on. In a few moments after its completion, a violent fit of coughing set in, which forcibly expelled the tooth through the wound. Chloroform was employed before the operation, and whilst under its influence, the trachea and adjacent parts were completely still. It was only during coughing that the veins became in the least degree turgid, (except for a few moments before opening the trachea, and whilst securing a small blood-vessel,) when under the influence of this beneficial agent. Immediately after the expulsion of the tooth, the cough ceased, and the patient slept soundly, and on awaking, she remembered nothing of the operation. All her symptoms are quickly disappearing, and no doubt she will soon be in a condition to be discharged from the Infirmary. *Lancet, Feb.* 26, 1848, *p.* 231.

85.—ON WOUNDS OF THE CHEST.—By G. J. GUTHRIE, Esq.

[Mr. Guthrie recommends the treatment of wounds of the chest in the following manner:—]

1. All incised or penetrating wounds of the chest should be closed as quickly as possible, by a continuous suture through the skin only, and a compress supported by adhesive plasters, the patient being afterwards placed on the wounded side.

2. If blood flows freely from a small opening, the wound should be enlarged, so as to show whether it does or does not flow from within the cavity. If it evidently proceed from a vessel external to the cavity, that vessel must be secured by torsion or by ligature.

3. If blood flow from within the chest, in a manner likely to endanger life, the wound should be instantly closed; but as the loss of a reasonable quantity of blood in such cases, say from two to three pounds, will be beneficial rather than otherwise, this closure may be delayed until syncope takes place, or until a further loss of blood appears unadvisable.

4. If the wound in the chest have ceased to bleed, although a quantity of blood is manifestly effused into the cavity of the pleura, the wound may be left open, although covered, for a few hours, if the effused or extravasated blood should seem likely to be evacuated from it, when aided by position; but as soon as this evacuation appears to have been effected, or cannot be accomplished, the wound should be closed. It must be borne in mind that the extravasation which does take place is usually less than is generally supposed—a point which auscultation and percussion will hereafter in all probability disclose.

5. If auscultation and percussion should indicate that the cavity of the pleura is full of blood, and the oppression of breathing and the distress are so great as to place the life of the patient in immediate danger, the wound, although recent, should be reopened.

6. As soon as the presence of even a serous fluid in the chest is ascertained to be in sufficient quantity to compress the lung against the spine, and time has been allowed for the closure of the vessel from which blood originally flowed, a counter-opening should be made in the place of election for its evacuation by the trocar and canula, which may be afterwards enlarged, unless the reopening of the wound should be thought preferable, which will not be the case unless it should be low in the chest.

Medical Times, April 8, 1848, *p.* 458.

ALIMENTARY CANAL.

86.—PRACTICAL HINTS ON DENTAL SURGERY.—By JOHN TOMES, Esq., Surgeon-Dentist in the Middlesex Hospital.

[From an interesting course of lectures on dental physiology and surgery, by Mr. Tomes, we have selected a few articles of great interest to the general practitioner, and first,]

On Scaling Teeth.—This operation consist in removing the tartar from the teeth, and is performed by the help of small steel instruments, of various forms, suitable to the parts upon which they are intended to operate. The point of the instrument should be inserted under the base of the tartar, and by pressing the instrument towards, or rather outwards from, the crown of the tooth, detach the tartar in a mass. Having broken away the bulk of the tartar, each tooth must be freed from the smaller adherent particles, by carefully scraping its surface with the edge of the scaler. The intervals between the teeth must be treated in a similar manner, till every tooth is completely free from concretion. The teeth may then be well rubbed with a piece of cane, or a brush, or a piece of soft wood, loaded with fine pumice powder, or powdered turkey stone, and after this again with a little precipitated chalk. By these latter processes the surfaces of the teeth are well polished, by which their appearance is much improved, and their liability to become again encrusted diminished.

The patient should be directed to well brush the teeth, night and morning, with precipitated chalk, flavoured to the taste of the user. Should the saliva be acid, (you will learn this by the use of test paper) then the dentrifice should contain a portion of carbonate of soda; ℥vij. of chalk and ʒi. of carbonate of soda from a good alkaline powder.

If the teeth are discloured, patients will often ask you to restore them to their original whiteness. This cannot be done. Acids will for a time improve their appearance, by dissolving the outer surface of the enamel, and thus exposing a new surface, but they soon again become discoloured and decay. Nothing can be more mischievous to teeth than the use of acid tooth-powers, neither should any but an impalpable powder be used, otherwise the teeth will be worn into deep grooves, and are ultimately destroyed. Areca nut charcoal has the effect of making the teeth look very white and its use need not be objected to; charcoal made from wood should be forbidden, for it contains silex, and will wear the teeth. In choosing a dentrifice, your first care must be to ascertain whether or no the saliva is acid, and is acting upon any of the teeth. And this point must determine whether the polishing powder shall contain a soluble carbonate or no.

Several years since, a notice appeared in the Medical Gazette, stating that sugar acted directly on the teeth. I put some teeth into sugar and water and in honey, but at the end of six months I could not find that they were all affected. Latterly much has been said against camphor as destructive to the teeth, though, as far as I know, within insufficient reason.

Medical Gazette, Nov. 26, 1847, *p.* 918.

On Plugging or Stopping Teeth.—A well stopped tooth, if the operation has not been too long postponed, is perfectly restored to its former durability and usefulness. I removed, last year, from an old man, a molar tooth that had been plugged for thirty years, and had been serviceable till within the last two years, when it became loose from absorption of the socket. You will often see teeth that have been stopped ten and twenty years.

Seeing, then, that so much may be gained by this operation in preserving the teeth, you cannot give too much attention to its practice; for while it is among the most useful, it is the most difficult operation the dentist has to perform This operation is divided into two parts; the preparation of the cavity for the reception of the plug, and the insertion of the plug. In the preparation of the cavity two points must be gained, otherwise the subsequent steps of the operation will be ineffective.

The first of these is to completely remove all the softened dentine; the second, to get a firm and regular orifice, of sufficient size as to enable the plug to be inserted, and at the same time not too large. If the cavity be large and the opening small, it will be almost impossible to make the plug solid in those parts of the cavity which are overhung; and, on the other hand, if the opening be large, and the cavity small and rounded at the bottom like a saucer, the plug will not be retained. The best form of cavity has a circular orifice with perpendicular walls; in fact, cylindrical.

The situation of the disease must regulate our manner of proceeding. If the cavity be situated in the opposed side of a molar, the tooth must be cut away with a sculper or graver till an excavating instrument can be used. If the sides of the front teeth are affected, a piece of vulcanized caoutchouc should be strained tight, and then introduced between the teeth: this, in endeavouring to regain its former figure, will separate the teeth sufficiently for the operator. When the masticating surface of a tooth is carious there is no difficulty in the operation; if the extent of the disease be slight, it may be removed by a broach of proper size. Having reduced the cavity, as nearly as attainable to the conditions I have described, the chips must be washed out and the cavity wiped dry with cotton-wool, and the plug inserted. In making the plug, our aim must be to so perfectly fill the cavity that all moisture shall be excluded, and that it shall be sufficiently hard to resist, equally with the tooth, the wear of mastication. Unless these two conditions are fulfilled, our work will be imperfect, and ultimately fail.

Gold or tin-foil are the best materials for making plugs. Whichever of these be chosen, the method of use is the same. There are three methods of introducing foil for making a plug. In one the metal is folded into narrow strips, proportioned in width and thickness to the size of the cavity. One end of the strip is, by means of a conveniently shaped stopping instrument pressed to the bottom of the cavity. The strip is then bent, and a fold passed to the bottom of the hole, leaving the first fold projecting above the surface. Fold after fold is introduced till the cavity is tolerably full. A wedge-shaped instrument is then introduced, and the gold pressed towards the walls of the cavity; more gold is, by a similar process, pressed into the cavity so obtained. This process is repeated till the wedge cannot be forced into the plug. A flat-ended instrument is then used to compress the gold in the cavity. When we can make no further effect on the surface of the plug by compression, the surface is filed smooth and burnished. By a careful adherence to this plan, we make a plug composed of layers of metal arranged parallel to the walls of the cavity, and therefore not liable to fall to pieces or come out. But, on the other hand, had we made the folds at a right angle to the walls, and parallel to the bottom of the cavity, layer after layer would have peeled off till little or none of the plug remained, and the decay would have proceeded to destroy the tooth.

In the second method, a piece of foil of sufficient size is rolled hard and spherical between the thumb and finger. This is gradually forced into the cavity, care being taken to get it well in round the outer walls. When the plug has been rendered as solid as possible, the superfluous portion is cut or filed off, and the surface burnished.

The third method of using metallic foil is a combination of the two preceding ones. A piece of foil is rolled up loosely that will readily go into the cavity. When in its place a wedge-shaped instrument is passed into its centre, which has the effect of spreading the gold towards the walls of the cavity. The centre is gradually filled with folds of gold in the manner I have described. The wedge is used again and again till it can no longer be made to enter. The gold is then compressed on the surface, and the superfluous portions removed, and the surface burnished. When the plug is finished in either of the manners I have described, the circumference should be examined by a sharp steel probe. If this can be made to enter at any part, the hole so made should be enlarged by thrusting in an instrument as large as can be introduced, and the hole filled.

Either of the foregoing methods of plugging will answer, if well done. But of these I prefer introducing the metal in folds. The situation of the cavity, and also the size, will have something to do with the selection of the plan of operating. Then, again, one person will be more apt at one manner of procedure than at another. All these matters of detail must be learned in practice. Where the cavity of a tooth is so large that the walls are too thin to bear the pressure necessary to the insertion of a gold or tin-foil plug, the amalgam of silver or of palladium may be advantageously used. Having prepared the cavity as for the use of foil, a little mercury is triturated in a glass mortar with a small quantity of precipitated silver or palladium, till they unite and form a paste, which is well squeezed in a piece of wash-leather to force out as much as possible of the mercury. The paste is then again rubbed in the mortar, or in the palm of the hand, and then introduced into the cavity. The cavity, however, must be first well dried with lint, and care must be taken to get the amalgam in close contact with the whole circumference of the cavity.

The plug so formed hardens in the course of a few hours, after which the surface should be well burnished. The American dentists condemn this kind of plug, as it seems to me somewhat unjustly. It is undoubtedly far inferior to either the gold or tin-foil plug, but it can be used where they cannot, and it is surely better than none. I have seen a mere shell of a tooth, that would have broken away on the first attempt at introducing foil, rendered useful for years by an amalgam plug.

Before leaving the subject let me warn you that unless the cavity be well prepared by the total removal of the softened dentine from the walls, and by getting a good, firm, and well-shaped orifice, free from acute angles, no plug will answer, and least of all the amalgam. It will fall out or become loose within twelve or eighteen months, and frequently in much less time, and decay will proceed. Teeth plugged with silver amalgam usually become stained of a deep blue-black colour. When the palladium amalgam is used there is little or no staining, if the excavating be perfect. The latter amalgam is therefore preferable. *Med. Gaz., Nov. 26, 1847, p. 918.*

On the Use of the Forceps in Extracting Teeth.—Forceps should be constructed and used upon the principle of lengthening the tooth for the extraction of which they are intended: thus enabling the operator to move it from side to side, or rotate it if the fang be single, and of a shape admitting of such motion. After these lateral movements for destroying the membranous union have been effected, the tooth may, unless the fangs have some peculiar position or shape, be raised in a perpendicular direction, leaving as little injury from its removal as the operation can admit.

When forceps are used for the extraction of teeth, the operation is divided into three stages—1st. The seizure of the tooth; 2nd. The destruction of its membranous connection with the socket; 3rd. The removal of the tooth from the socket. When you commence operating, it will be of great service to you, and advantage to those operated on, that you should pay strict attention to these stages, and that each should be well and efficiently executed before you proceed to its successor; for, should the tooth be unskilfully seized, the crown will be broken off in the attempt to detach the tooth from the periosteum of the socket, until which is effected, the fangs cannot be removed from their bony cells. You will find that a tooth will resist a great force applied in a line with its axis, or, in other words, if you attempt to pull a tooth straight from its socket.

In seizing a tooth, the jaws should be closed lightly on the tooth, and inserted under the free edge of the gum, and then *forcibly* driven down to the edge of the alveoli, or even a short distance into them. I say forcibly, because all beginners, and even some practised in the use of forceps, are liable to failure because they do not use sufficient force: they seize the tooth at the edge of the gum, instead of at the edge of the alveoli. I wish to impress upon you the absolute necessity of laying hold of the tooth as far down towards the fangs as you can possibly get the instrument. An old and successful operator, when instructing another in the use of forceps, said—"Push them into the sockets as though you intended they should come out at the top of the head, or under the chin."

Med. Gaz., Nov. 26, 1847, p. 923.

☞ [Mr. Tomes remarks that as the end to be attained in the application of forceps is that the pressure may be diffused over as large a surface as possible to avoid fracturing the tooth, it is desirable to have forceps made of various shapes and sizes. On the mode of using the instruments, he says,]

The forceps having been well pushed up to the alveoli, and the tooth firmly grasped, attempt, by a firm and steady turn of the wrist, to twist the tooth in its socket, and, so soon as you feel it give, it may be drawn from its socket with little effort. The incisors of the lower are smaller than those of the upper maxilla, and much more compressed laterally. Forceps for the extraction of these teeth will require to have the jaw which is to be applied to the posterior smaller than that for the anterior surface of the neck. The jaws of the instrument should be straight; but it will be found convenient to have the handles curved, so as to avoid the upper maxilla when the mouth cannot be opened wide. When the tooth is grasped it must be forced outwards, accompanied with the slightest possible degree of rotation, and, when it is felt to yield, draw upwards.

The cuspidati require for each a pair of forceps made upon the same plan as those for the removal of the incisors, except that they must be larger and rather stronger. Those for the cuspidati of the lower jaw should, like forceps for the incisors of the lower jaw, have the handles slightly bent. Sometimes these teeth are very small, in which case forceps adapted to the adjoining teeth may serve for their removal. These teeth, whether in the upper or the lower jaw, may be detached from their membranous connection with the jaw by a rotatory movement, and then leave the socket readily.

The bicuspides will be extracted with instruments similar to those already described, except that there will be a little difference in the jaws, which must be accurately fitted to the neck of the tooth. These teeth are not very frequently liable to much variety in size, so that an instrument which is well adapted to an ordinary bicuspis tooth will apply itself to almost all. I have forceps in which the jaws are bent at right angles with the handles, and open laterally, for the extraction of bicuspides of the inferior maxilla. But they do not answer so well as straight instruments, it being less convenient to apply the necessary force, and more difficult to regulate its direction. In extracting teeth which have their fangs laterally compressed, and are placed in a row with other teeth of like-shaped fangs, the only available movement will be at right angles with the row, and in the direction of the greatest diameter of the fangs. This may be obtained whether the forceps be straight or rectangular; but with an instrument of the latter shape the movement must be effected by rotation of the wrist with a motion upwards. The centre of the rotatory movement will be either at the extremity of the jaws of the instrument, or else in a line with the handles of the instrument and wrist. Force applied in this manner would seem to be given at great disadvantage, and much expended on the alveolus; there inflicting injury, which, although in the vast majority of cases it is scarcely complained of by the patient, prevents the mouth from so speedily recovering from the operation.

The bicuspids of the upper jaw have the necks compressed laterally. In removing them, whatever be the form of the instrument used, the force must be first applied in a direction outwards and at an angle to the dental arch. The tooth should be moved outwards and inwards, and then drawn downwards. But it must be borne in mind that in forcing it outwards or inwards, we desire only to break its connections with the socket, and not to draw it out; and that if the force be continued in this direction with the hope of removing the tooth, it will be broken off. The bicuspids of the lower jaw have more conical fangs than those of the upper, and hence may be detached by rotation, and then lifted out of the socket.

When I say rotation, I do not mean that the tooth shall be twisted a half or even a quarter turn, but that it shall be twisted till the attachments are felt to give way. If more force is required to effect this than you deem judicious to employ, then the direction of the twisting may be changed, or the movement abandoned. There are some teeth that vary so much from the usual form of root that they cannot be turned in the socket. The degree of force, in this and in all other cases of like operations, that it is necessary to employ, can be learned only in practice.

On extraction of the molares.—The molares of the superior maxilla have three fangs—two external, one internal. Of the two external fangs the anterior is the largest, and is placed in a plane external to the posterior fang, which is shorter as well as smaller. The third, the internal fang, is thicker and of greater length than either of the others, and is situated opposite making a fulcrum of the alveolus or an adjoining tooth, pries out the offending tooth much in the same manner you see a pavior raising a flag-stone; or the point may be stuck into the side of a stump, and by pushing it outwards in a line with the axis of the stump, force it from its socket. This latter plan can only be adopted when the stump is loose or the alveoli lowered by absorption, so that the retaining power of the stump is much diminished.

Where two teeth are standing together, either may be removed by forcing the elevator edgeways between them, and turning it when in that situation towards the one to be extracted. The round side will rotate against the one, while the lower edge will cut into and raise the other from its socket.

Med. Gaz., Dec. 10, 1847, *p.* 1005.

On the Construction and Management of Artificial Teeth.—The base of artificial teeth is usually formed of sheet-gold, or of dentine—the dentine of the hippopotamus, or of the walrus-tooth—and by the following means:—Bees-wax, previously softened by immersion in hot water, and well kneaded, and then placed in a horse shoe shaped tray of ordinary size, is introduced into the mouth, and carefully pressed against the gums until they are perfectly imbedded. The tray of wax is then as carefully withdrawn, and if successfully, will present a perfect mould, or countercast of the gums. Into this plaster of Paris is poured and allowed to set, after which it is removed from the wax by softing the latter, and then presents a cast, a facsimile in size and form, of the gums—supposing, of course, the mould to have been correct. It was usual in my workroom, and I believe in all others, to assume that it was correct, and upon that faith to proceed to construct the teeth from and to fit the plaster cast so obtained, until about two years since, when I had the gratification to discover means whereby the correctness of the cast could be readly tested. Since this time I have always availed myself of the test previous to commencing the teeth.

The means I allude to, with other appliances for teeth-making, formed the subject of a patent in 1846. It consists in the compounding of a material like in composition to extremely hard sealing wax, but which is soft and plastic at the temperature of boiling water, though hard and unyielding at that of the human body. This material, when softened, is moulded on the plaster cast into the shape of the required teeth. Thus we have, at little or no cost of time, a model of the new teeth, on which, by the aid of a little hot water, we can work any required changes, should it on being placed in the mouth need any. And this, of course, will depend on the faithfulness of the cast on which it has been moulded. If the cast be correct, the model will fit equally well both the cast and the mouth, but should the cast be faulty, the model made on it will not fit the mouth, whereby we discover the error in the cast, and proceed to its correction. The faulty cast is thrown away, and the composition model is slightly softened by immersion in hot water. When in this state it is carefully moulded to the surface of the gum, and then allowed to harden. When hard it is again put in the mouth, and, if found to fit, is used to furnish a plaster cast in the same manner as the bees-wax mould did in the first instance; by which measure we obtain a known perfect cast, to which we may make the new teeth without fear of failure. Should gold be chosen for the base, casts in metal, zinc, or brass, are made from the plaster cast, and from these again, counter-casts, or reverses in lead are made, between which and the cast, gold plate is hammered, until it has assumed the form, and fits perfectly to the surface of the cast, and, of course, also to the gums.

If dentine be chosen for the base, it is usual to cover the plaster cast with red pigment, and to place upon it a block of dentine in the position it is required to take when fitted. The block will at first touch only at or on two points, and these will be marked by the adhesion of a little of the pigment. The points so indicated are cut away with a sculper; the contact is renewed, and the reddened points again removed. In renewing the contact between the block of dentine and the paint-covered cast, great care should be taken to keep the two in the same relative position as on each preceding occasion. This tedious and somewhat uncertain process is repeated again and again, and to the extent of many hundreds of times, till the block is cut to fit the surface of the cast. The superfluous portions are then removed, and the base so made prepared for the reception of the teeth.

In my own work-room the base is carved by a patent machine, which altogether supersedes the hand carving and the pigment. A model of the required teeth is made in the moulding composition, and this is fixed in the machine, and then copied into dentine with much saving of time, and without the possibility of error. For the invention of this instrument I had the honor to receive a gold medal from the Society of Arts.

The base, so far as its gum-fitting surface is concerned, having been finished, we have next to select the teeth which the base is destined to carry. Teeth used in making artificial teeth are of three kinds; natural teeth, mineral, and carved teeth—that is, teeth carved out of dentine. The latter, when dentine is used for the base, are carved out of the same block in one piece. When natural or mineral teeth are selected, they are fixed to the base by pins. In speaking of artificial teeth, dentists divide them into front teeth and side-blocks. The front teeth are like, and have the same names as the natural teeth, including the bicuspides; while those corresponding to the molar teeth are made in one continuous piece, and are called the side blocks of the piece. I should here tell you that the teeth with their base, whether few or many, are termed a piece, an upper or under piece, as they may be for the upper or lower jaw. The teeth are fixed to the base by pins passing through, or nearly through the centre of each tooth, and soldered to the gold or riveted through the dentine, according as the base may be composed of the one material or the other.

Artificial teeth are retained in the mouth by three different plans: (1st,) by spiral springs attached by their ends to the pieces of the two jaws, when the set is complete, or when the under teeth are perfect, to caps fitted to these teeth. The springs themselves are made of gold wire, twisted spirally round a small piece of cylindrical steel. They are fixed to the teeth by a swivel or loop, through which a pin passes to the base or to the blocks; while the swivel itself terminates in a piece of wire, which exactly fits into the interior of the spring, into which it is pressed. With this arrangement the springs are readily detached, even by the patient. Should the spring fit too loosely on the swivel, a little flos silk should be wrapt round the latter before pressing it into its place in the spring. And this, too, may be done by the patient, should a spring accidentally leave the swivel.

(2d.) By clasps, or bands, of elastic gold, passing partly round natural teeth. The clasp is attached in a part only of its length to base, the remaining portion is left free, and springs open to receive the tooth. If at any time the clasp does not firmly embrace the tooth, it is only necessary, to make it do so, to bend the free portions towards each other; it will then again take firm hold.

(3d.) By the pressure of the atmosphere. The gum-fitting surface is so accurately fitted to the surface of gum, that the saliva and the air are excluded, whereby the pressure of air acting only on that surface of the teeth exposed to the tongue, holds them in tight contact with the gums. Teeth on this principle, though the most difficult to construct, are the best kind when well constructed, seeing that they are wholly independent of any remaining natural teeth of the same jaw, and also of those of the opposite jaw. Pneumatic teeth are usually made of dentine, while those retained by clasps commonly have a gold base. Sometimes the base is made of dentine, and fitted round or between remaining natural teeth, and is thus retained. Then, again, teeth may be constructed to be retained by a combination of two of these plans.

It is of great importance that you should know how to preserve false teeth, for in the absence of proper attention they are soon destroyed, and still sooner become offensive. The wearer often seems singularly unconscious of the offensive odour arising from neglected teeth—not so, however, the bystander; he is almost poisoned by the offensive breath of his neighbour. Dentine is used in the construction of most sets of teeth, and this substance you are aware, if neglected, is soon acted on by the saliva, and gradually suffers decomposition; hence arises the stench.

I have told you on several occasions that dentine, when highly polished, resists the solvent action of the saliva. The patient should pay great attention to this point. The surfaces of the teeth should be well brushed with a little precipitated chalk at least twice a-day; and after brushing, rubbed with a dry soft towel, or handkerchief, or a piece of wash leather. By these means a beautifully polished surface may be retained. When not in the mouth, the teeth should be kept in a well-stoppered glass jar, filled with two-thirds of spirits of wine, and one-third water. The antiseptic quality of the spirit aids much in preserving the dentine, and moreover keeps them sweet. By great attention, cleaning, and immersion in spirits of wine when out of use, artificial teeth will last quite as long again as they would if these means were neglected. Artificial teeth cannot be too well kept, but they can very easily, and frequently are, too ill kept. If the base be gold, and the teeth mineral, still they should be well cleaned each day: if the base be gold, and the teeth dentine, there is yet greater need of frequent and careful cleaning. If the base be of dentine, and the teeth natural teeth, the piece will soon be destroyed if cleaning be neglected. Nothing short of never removing artificial teeth from the mouth should be more strongly deprecated than the habit some people have of taking them out only once or twice a week, and other times cleaning them in the mouth. They cannot be well cleaned when in the mouth, and the surface of the mouth cannot remain healthy when perpetually covered. It must be borne in mind that the gums are covered with epithelium, and that it is the nature of this tissue to be perpetually forming below, while it is suffering perpetual loss from its surface. The scales are rubbed off by the tongue and food. Now if the epithelium be perpetually covered by the base of artificial teeth, the formation will still go on, but the loss from the surface is retarded. The outer ephithelial scales may separate, but cannot escape from the surface: they, therefore, accumulate under the base, and there become highly offensive. After a while the mucous membrane inflames, and the development of epithelium is suspended or vitiated; the scales no longer adhere to each other to form a membrane. If the teeth be removed after the mouth has got into this condition, the surface which has been covered will be found red and vascular, and will bleed on the slightest touch. The fitting surface of the teeth will be coated with a white sebaceous matter highly offensive.

Artificial teeth should not, as a habit, be worn during the night, unless their presence is necessary to the comfort of the patient, or for the preservation of the remaining natural teeth. In either case it is desirable that the patient should have a set for the night—a set with a much smaller base than those used for mastication; and when practicable, a piece fitted to one jaw only, and extended to the opposite jaw for the gums to close on. All that is required of night-teeth is, that they shall keep the jaws apart. The surface of the gums is naturally uncovered, bathed with saliva, and subject to friction; it is desirable, therefore, that it should be left free eight hours out of the twenty-four; and, if some part must be covered even during night-time, let that be as small as possible.

Med. Gaz., Dec. 24, 1847. *p.* 1093.

87.—ON THE TREATMENT OF INDURATED TONSILS.—By Dr. J. Naudin.

The tonsils, by their situation, are often exposed to attacks of inflammation, which, after repeated occurrence, not unfrequently passes into a chronic state of induration. The disease is generally non-malignant, and affects both tonsils: carcinomatous induration being, on the contrary, much more rare, and affecting usually but one. The seat of this hypertrophy is neither the mucous membrane nor the cellular tissue, though their nutrition may also be altered; but in the glandular substance itself. The cause of the frequent occurrence of hypertrophy of glandular organs is, that possessing a supply of arterial blood, infinitely greater than is necessary for their nutrition, a large portion of which is destined to supply the material for secretion, any circumstance which produces a suppression of this secretion causes the excess of arterial blood to become expended on the nutrition of the glandular substance, thereby inducing its hypertrophy and induration. Physicians are generally very neglectful of chronic inflammation of the tonsils, too often allowing the case to run on, and finally putting it into the hands of the surgeon for excision. The means, if any, employed with the view of reducing the tumours, are generally insufficient; and our author, instead of blisters, astringent gargles, iodine, &c., substitutes gentle cauterizasion, as employed in chronic inflammation of other organs. Instead of producing a slow progressive destruction of the tonsils, he aims at their preservation, and for this purpose employs a solution of nitrate of silver, 3 gr. to ℥j of water, increasing the strength by 3 gr. up to ʒij of the nitrate, in the same quantity of water, and also applying the solid caustic to the surface of those hollows which usually exist in such tonsils, so that all parts may be equally affected.

During one sitting the tonsils are painted twice or thrice; the mouth is then well washed with water. This cauterization must be repeated every two or three weeks, until the tonsils are restored to their normal size, and then gradually discontinued; it produces no ill consequences, and even children speedily return to their play. Should the parts become accustomed to the caustic, it must either be discontinued for a time, or another substituted, as Lugol's diluted solution of iodine. In two cases related by our author, the nitrate alone was employed. Both, aged 13 and 14, had been affected for years, and were cured in two and a half to three months; in a third case, that of a girl aged eleven, the disease was extensive and obstinate, requiring four month's use of the caustic, besides the use of hyd. pot. and iodine internally, and as ointment. In all these cases, no return has been observed after the lapse of years, and the previous disposition to inflammation of the tonsils has been extinguished.—*Journ. de Toulouse*, Juin et Juillet, 1846.

Monthly Journal, Dec., 1847, *p.* 438.]

88.—ON INTESTINAL OBSTRUCTION.—By B. Phillips, Esq., F.R.S., &c.

[Mr. Phillips bases his observations on the consideration of 169 cases of more or less complete obstruction which he has collected.]

The result of a careful analysis of symptoms and cases went to satisfy the author's mind that no arrangement of symptoms is so definite or constant as to make a diagnosis of the cause of obstruction conclusive. Supposing operation to be resorted to, it is of course very desirable to ascertain the seat of the affection; and here the difficulties are not less formidable than those which occur in attempts to determine the cause of the obstacle. The history of the case may give assistance in some instances, the existence of a tumour in others, and the distended intestine in a few cases: but in most instances we shall be left in doubt. The author then states the results—unfortunate enough, certainly—of ordinary treatment; and concludes that there are cases in which recourse to surgical operation is justifiable. He showed that the abdominal walls had been cut through in more than fifty cases, for the purpose of affording relief, stating the particulars of many, and the results of all; and showing that of those operations, twenty-four appear to have terminated favourably. He showed, further, that some of those operations were undertaken with a view to seek the object and to remove it, but in very few instances has the object been accomplished, the ordinary result being the establishment of artificial anus; and he regarded this as the only practicable result of operation in cases which do not prove fatal.

[Mr. HILTON observed that :]

In the cases which he had seen of impassable obstruction in the upper part of the jejunum, the deficient secretion of urine was a most remarkable feature; and he believed when this symptom was observed in association with a flattened or concave condition of the abdomen, the two in combination might be considered almost pathognomonic of the seat of the obstruction being near the stomach. He would merely take this example as an instance of what he thought might possibly have been ascertained if the contents of the paper had been grouped in reference to the position of the obstructing cause. He agreed with the author regarding the propriety of the median section of the abdominal parietes, when the operation was deemed necessary, and the exact seat of the obstruction not known; but after opening the abdomen, instead of attempting to trace the distended intestine, with the view of reaching the constricting cause, he would prefer the plan which he had himself adopted, of tracing the empty intestine towards the constriction, and using it to discover the obstructing cause. In some of the cases related in the paper, it was mentioned that large and distending quantities of air had been thrown into the intestines, with the intention of relieving the obstruction. He doubted the propriety of such a proceeding; for he had observed in practice, and as the result of direct experiment upon the intestines in lower animals, that extreme distention causes paralysis of the intestinal muscular fibres. He could fully confirm an observation the author had made, that although the long tube may have been introduced into the rectum to the extent of two feet or more, instead of its having travelled to an equal length along the intestinal canal, it had actually gone but a very short distance, and had then become coiled upon itself.

Dr. TODD disagreed with Mr. Hilton in considering a flat or concave state of the abdomen a diagnostic mark of the obstruction being situated high up. He thought that the author was right in the view he had taken on this point, and related two cases, in which the abdomen was flat and concave, the intestines containing no gas, in both of which instances the obstruction was low down; in one case, a band extended from the ileum to the mesentery, coiling round a fold of intestine; and in the other case, the strangulation was at the internal abdominal ring, though no evidence of its being so situated developed itself before death. The conclusion he had come to, in reference to the flaccid state of the abdomen, in cases of obstruction, was this—that if inflammation existed, tympanitis was present, and if it did not exist, the belly was flat or concave. As to the question, whether in obstinate constipation, we should, or should not, administer purgatives, he was convinced, that after the first day or two we should do away with purgatives altogether; or, or if we did use them, we must employ the gentlest and mildest of those agents. He had not seen cases of this kind cured by means directed particularly to the removal of the obstruction, although, in one instance, the obstruction had yielded to the introduction of a moderate quantity of air into the intestines. He did not advocate the use of a large quantity of air in these cases, as such a proceeding was likely to paralyze the intestines.

Dr. BRIGHT remarked that our diagnosis of the situation of the stricture in cases of internal strangulation was but imperfect, but he had observed, in one or two cases in which the obstruction was situated in the small intestines, the peristaltic action of these could be seen more distinctly than when the obstruction was in the colon. There was however, in most cases, excessive difficulty in arriving at a knowledge of the exact seat of the strangulation. He suggested that the paper might be incorrect in its statistics of the fatality of these cases, as it only appeared to embrace those instances of the disease which might be almost considered hopeless, for it was well known to what a great extent, as to time, obstruction might exist, and yet the patient get well, contrary to the expectation of the practitioner in attendance. He remembered several cases of this kind, in which the operation proposed might have been resorted to, as apparently the last and only remedy. He related one case in which constipation, with vomiting, had existed for six weeks, the abdomen eventually becoming as large as that of a pregnant woman at the ninth month. This patient eventually did well. In these cases, all violent means, whether purgatives or others, should be avoided after the first few days, the patient receiving more benefit from mild and gentle remedies.

Dr. **Copland** thought, that in these cases, after the first day or two, all active purgatives should be avoided. He related two cases of obstinate constipation, attended by vomiting and unaccompanied by inflammation. The first of these was the case of a woman in whom the obstruction continued for three or four weeks. For several years previously she had been in the habit of chewing and swallowing sealing-wax. Drastic purgatives were given at first, but soon discontinued, and after soothing the stomach, she was ordered to take a teaspoonful of sweet oil several times a day, and to use an injection of the same agent twice in that period. Eventually, large masses, consisting of agglutinated sealing-wax, were evacuated, and the patient did well. In the other case, the woman was twenty-seven years of age, and had been long in the habit of chewing her curl-papers. Symptoms of obstruction came on, which, under similar treatment to that employed in the last case, gave way, and sixteen or seventeen large balls like hen's eggs came away, consisting of hair-paper.

Mr. **Travers** remarked, that the subject under discussion was almost unapproachable, both for its wideness and the difficulty of our diagnosis in cases of internal obstruction. In fact, cases of this kind appeared to him to be beyond the pale of surgical assistance, but after the extraordinary cases in surgery which had occurred of late, he should not be surprised at anything. With respect to the statistical report which had been given in the paper, it was, no doubt, of value; but he could not help cautioning the meeting against taking literally all the statements made. He considered that the cases referred to by the last speaker not such as were meant to be discussed by the author of the paper, who had confined his observation to cases of valvulus, fungous tumours in the alimentary canal, to stricture, an envelopment of a portion of intestine by some adventitious membrane, or its passage through a breach in some membrane, and to invagination. Now he (Mr. Travers) considered the simple questions to be discussed were these:—First, do obstructions dependent on any of these causes admit of being localized in such a manner as to guide the surgeon in any operative procedure he might think it desirable to undertake? and, secondly, were we justified in exploring the abdomen to ascertain the nature and seat of the obstruction, with a view to its removal? His own experience was, that the case was hopeless at the time when any operation would be justifiable. Before such a proceeding would be warrantable, ileus of such a character as not to be relieved must exist, and with this, inflammation to such an extent as not to allow of further delay. Well, then, if the surgeon could diagnosticate, with tolerable accuracy, the seat of an invagination for instance, and explore the abdomen, the intus-suscepted portion of intestine could not be drawn out so readily as the paper would lead us to suppose; for in consequence of the inflammation which had existed, or did exist, the serous membrane of one portion of intestine had become so agglutinated to the mucous membrane of the other, and become so thickened, as to make it almost impossible to separate the united portions. With regard to the cases which had convalesced under the care of Dr.

Bright, and cases of a similar kind, the obstructions here were evidently not the result of stricture of intestine by a divided mesentery or adventitious band, or from stricture, but were dependent upon some absorbable tumour which compressed the canal. Cases of this kind were not uncommon, but if the tumours were of a malignant character, recovery was not to be expected. He had at present under his care a young gentleman suffering from some morbid condition of the intestinal tube just below the umbilicus; he had suffered for some months from attacks of a spasmodic character, which came on when the bowels were constipated, and were only removed by the mildest purgatives, and the most gentle means. In conclusion, he might observe that the class of cases described in the paper were generally of a hopeless character; every case was of itself a study, each one being different, and the causes so various, that we could not generalize on the subject.

[In reply to Mr. Travers's remark on the difficulty of withdrawing from the constriction an invaginated portion of intestine, Mr. Phillips showed that in some of the cases he had narrated this had been done with success.]

Lancet, Nov. 20, 1847, p. 551.

89.—ON INTERNAL STRANGULATION OF THE INTESTINES.—By J. MACKENZIE, Esq., Naval Hospital Archangel.

[Mr. Mackenzie remarks, that, considering the great fatality of this disease, if left to itself, it is strange that operative interference is not more frequently resorted to. An operation cannot make matters worse than, in the majority of cases, they are; while it is not unlikely to be successful if a correct diagnosis can be made. There is one class of cases which Mr. Mackenzie thinks can be diagnosed with almost certainty.,—cases of "*dislocation of the sigmoid flexure of the colon.*" Mr. M. says,]

I use the term dislocation, as being more applicable, inasmuch as it implies the operation of some active force, considering that condition necessary before a sudden displacement can take place. That the intestine is torn from its attachment by a sudden force, I am fully convinced, from having discovered the mesocolon lying in loose shreds amongst the intestines, saturated with extravasated blood: a circumstance which could not in any other manner be accounted for.

What renders the sigmoid flexure so peculiarly liable to dislocation, I am at a loss to determine. In those cases which have come under my observation, the imprudent use of raw indigestible substances, as cranberries, turnips, cabbage, &c., was suspected as the cause of the disease. Possibly violent distension of the tortuous gut, by flatus, may force it, on physical principles, to assume a straight position, and thereby a strain being necessarily made on its attachments, contribute to its separation. In whatever manner the displacement is affected, the result is remarkably uniform: the intestine is thrown from its natural situation towards the centre of the abdomen, and receives a twist at its termination in the rectum, which causes complete obstruction of the passage; the small intestines get coiled round it in such a manner as to strangulate the gut by the free margin of the mesentery. In these cases, while all the symptoms of strangulation and obstruction of the bowels are present, there is one symptom never absent, which, respect being had to the history of the case, leads to a correct diagnosis, namely, that it is impossible to throw up injection per rectum in any quantity, for as soon as the gut is filled as far as the twist or volvulus, which is always low down, the water or fluid injected flows out as fast as it is thrown up, independent of any action of the rectum itself. Besides, the introduction of the long tube is impracticable, being always arrested at the obstruction.

It is evident that no method of treatment, save by operation, can possibly do any good in this class of cases. The administration of purgatives in these as well as in every other case where there is mechanical obstruction. cannot be too severely reprobated, inasmuch as they invariably accelerate the fatal result, and add to the sufferings of the patient.

[Mr. Mackenzie illustrates his views by a detail of three interesting cases, for which we must refer our readers to the paper itself.]

Med. Gaz., March 10, 1848, *p.* 407.

90.—ON OPERATION FOR HERNIA EXTERNAL TO THE SAC.—By Dr. J. DUNCAN, Senior Surgeon to the Edinburgh Royal Infirmary.

[This operation, which was first proposed by Petit in 1718, and has been more lately advocated by Sir A. Cooper, Mr. Luke, Mr. Liston, but especially by Mr. Key, (and, we may add, by Mr. Teale,) is not Dr. Duncan thinks, so generally adopted as it ought to be. Dr. D. says,]—

It has been remarked by Mr. Luke, that there are two causes which influence the mind of the surgeon, tending to create, on his part, a temporising and procrastinating practice—these are, the general knowledge which he has acquired of the unfrequent fatal termination of hernia when returned by the taxis, and the frequent fatal sequence of operations. If, says the same surgeon, that presumption be correct, the best and most useful endeavour will be to strip the operation of its terrors, by substituting in its place one simple in its execution, and devoid of the ascertained dangers to which it exposes the patient. By the adoption of Petit's operation in place of the ordinary operation, I think this beneficial substitution is attained; an opinion which, if equally impressed upon the minds of surgeons in general, will doubtless remove the chief obstacle preventative of the early recommendation of operation.

[Dr. Duncan notices the various objections which have been urged against this operation. One is the alleged difficulty of its performance: this he thinks is exaggerated. Another is, that when the constriction is caused by the neck of the sac itself, we are liable to return the sac along with the viscera when strangulation would still be maintained. But these cases are rare: and indeed if proper precautions are taken, and the pressure applied in a proper manner, there is less danger of returning the hernia *en masse*, than when reduction is attempted by the taxis. Dr. Duncan proceeds to say,—]

The most serious objection undoubtedly is, the danger of returning the bowel or omentum in a state of gangrene. Wherever there is any suspicion, either from the length of time that the strangulation has existed, or from the symptoms, that the intestine is in this state—then it is the clear duty of the surgeon to proceed in the ordinary way to open the sac, and to give exit to the contents of the bowel. In some cases, the existence of gangrene is pretty unequivocally pointed out by the symptoms; but there are others in which it may exist, and there may be nothing to indicate with certainty the actual state of matters: still there is generally sufficient to give rise at least to strong suspicions, and of course to induce the surgeon to proceed in the usual manner.

The return of a portion of bowel in such a state, would be attended with considerable risk of fæcal extravasation when the slough separated, and there is no doubt that the resistance of the undivided sac would act injuriously; but perhaps less so, as has been argued, than when sloughing takes place after reduction by the taxis—the only barrier in addition to the recent adhesion of the integuments, as in the operation when the sac is divided, being a single layer of serous membrane, which had already been partially detached from neighbouring tissues, and would readily slough under the first burst of inflammation excited by fæcal matter in immediate contact with it. In some cases we find, when the sac is opened, that the bowel, though not actually in a state of gangrene, presents such appearances as to indicate an approach to it; and in others we find, though the bowel appears at the time to be in a healthy state, that in a few days a discharge of fæces takes place by the wound, indicating either perforation by sloughing or ulceration. The risk of this occurring, Mr. Key considers, and I believe with justice, to be much diminished by this operation; the preserving the sac entire, diminishing the chance of inflammation, which, in the weakened condition of the bowel, is the cause of the subsequent sloughing of the coats. This objection does not, of course, apply to cases in the early stages of strangulation; and fortunately cases of gangrene are comparatively rarely met with, surgeons generally being now strongly impressed with the importance of early operative interference, and more alive to the danger of long-continued attempts at reduction by the taxis and its adjuvants. *Monthly Journal, March*, 1848, *p.* 633.

[Mr. Luke lately read before the Medico-Chirurgical Society, a paper containing the results of his experience in this operation. We find from his paper that,]

Inclusive of selected cases occurring between 1831 and 1841, the author stated that he had attempted the performance of Petit's operation in eighty-two instances, which, with four exceptions, likewise comprised all the cases that had come under his care since 1841. Of this number the operation was completed, without opening the sac, in fifty-seven. In twenty-five it was necessary to open the sac to complete a reduction of the hernial contents—the opening varying in extent from half an inch to one inch and a quarter. With respect to the mortality amongst these patients—of the fifty-seven in whom the sac remained unopened, seven died; of the twenty-five in whom the sac was opened, eight died. The author considered, however, that for statistical purposes it was preferable to exclude the selected cases (twenty-six in number), together with four other cases, of which three were considered moribund at the time the operation was performed, and the fourth died of secondary stricture six weeks afterwards. Of the remaining fifty-two cases, the sac was opened in twenty-one, of which three died, and not opened in thirty-one, of which two died. Of the cases in which the sac was opened, in ten the strangulation of the contents had existed, before the operation was performed, under twenty-four hours, of which number one died; in eight, above forty-eight hours, of which one died. Of the unopened cases, the strangulation had existed in thirteen under twenty-four hours, of which not one died; in eleven, under forty-six hours, of which one died. The author considered it important that the small size of the opening made into the sac in the former class of cases, should be borne in mind, as it doubtless had an important influence in diminishing the ratio of mortality attached to this mode of operating. He then passed on to further details relating to the above cases, and the reasons for opening the sac, and stated, that, of the fifty-two instances cited, twenty-nine were femoral, twenty inguinal, and three were umbilical hernia. He further pointed out the conclusion, from an analysis of the foregoing cases, that Petit's operation has proved most successful in the femoral form of hernia. In cases of inguinal hernia, the author limits his incision to a longitudinal division of the skin and fascia over the neck of the sac, of which cut the seat of stricture should be the centre. He then partially incises or scarifies the neck of the sac (if the seat of stricture, as it usually is), so as only partially to divide it, and so that it shall yield to the subsequent application of the taxis. In femoral hernia he considers it very desirable to avoid, as much as possible, interfering with the tumour in conducting the operation, and therefore recommends that a similar proceeding should be adopted—the centre of the perpendicular incision in this case being between the upper part of the tumour and the abdominal surface. Poupart's ligament is thus reached by carrying the finger from above downwards, and the stricture is divided on a director, introduced into the femoral ring. The operation advocated by the author is not considered by him to be so applicable in umbilical hernia, except where it is of small dimensions.

[Mr. HILTON said that this mode of operating had been for some years resorted to at Guy's Hospital whenever practicable. He remarked that.]

Upon the whole, perhaps, the chief causes tending to death, in ordinary cases of strangulated hernia, were the structural injury done to the intestine by the continued unsuccessful efforts most strenuously made to return it into the abdomen, and the delay in operating, caused partly by the alarm of the patient, at the pain which might be experienced, and by the natural anxiety of some surgeons to defer the use of the knife, knowing how great was the fatality after the operation for strangulated hernia, when the sac was opened. These two evils might be now fairly met. At the present time, he could assure the patient of an entire freedom from pain, by the influence of anæsthetic agents, and so do away with one of the causes leading to delay, and acting upon the facts so fruitful, and conclusions irresistible, which this paper exhibited, and which the experience at Guy's Hospital enabled him to support, the surgeon ought and would be induced to operate early, and thus deprive a necessary operation for the relief of strangulated hernia of a very great portion of its formerly associated dangers.

He much doubted if language too strong could be employed in favour of the proceeding which experience and this communication recommended. In cases of strangulated femoral hernia, the operation without opening the sac was usually one of great facility, as the obstruction or stricture was generally caused by the fibres or bands of fascia (propria) crossing, nearly transversely, the front of the neck of the hernial sac, just below Poupart's ligament: when the hernia was small, a short, vertical incision, intersecting the direction of those fibres, would give sufficient space for the completion of the operation; and when the size of the hernia was more considerable, and the depth of the stricture great, he had found that, instead of the inverted ⊥ incision, a single semi-lunar cut, made across the upper third of the tumour, with the convexity of the curve downwards, exposed abundance of room for its easy completion. In strangulated inguinal hernia, the constricting cause being more frequently in the neck of the sac itself, this operation was more difficult, and sometimes unavailing, and he would remark, that the recommendation of the author to incise at several places the external aspect of the almost linear surface of the annular depression or stricture in such cases (so as to enable it to be expanded by the intestinal pressure from within) required extreme care and delicacy on the part of the operator, to avoid wounding the intestines which were pressing outwards and merely covered by the thin peritoneal sac. He doubted whether this operation would be often practicable in umbilical hernia strangulated, for the hernial sac itself was frequently found so firmly adherent to the tendinous margin of the umbilical opening, that it was almost impossible to interpose a director; and further, the constricting cause was oftentimes discovered within the hernial protrusion, quite independent of the neck of the sac, or the structures external to it.

Mr. COULSON mentioned to the Society, as bearing on the subject of the valuable paper just read, an operation which had been recently suggested by a friend of his (Mr. Gay) for strangulated femoral hernia and herniæ generally. The principle of the operation consisted not only in not dividing the sac, but in not interfering with the hernial tumour at all. If a subject be dissected in which there is an unreduced femoral hernia, there will be found on the inner side of the hernia a space, which, for the purpose of description, he would describe to be of a triangular shape, varying in length and breadth, according to the size of the tumour, but seldom less than an inch in length, and a thumb's breadth in width. The apex of this space is at the point where the falciform or upper edge of the saphenous opening crosses the neck of the sac; the outer side is formed by the sac; the inner and upper side by a line drawn from the neck of the sac to the spine of the pubes. In the natural condition of parts this space is of some depth, and when femoral hernia exists the depth is much increased. Now, in this operation it is proposed, taking the spine of the pubes and the tumour as the guides, to cut into this space midway between these marks, feel with the point of the finger for the crescentic edge of the crural opening, and directing Turner's knife (which is both a director and knife) upwards and inwards, divide the stricture. He had seen the operation for strangulated femoral hernia, of large size, performed on this plan on a stout woman, and the rupture reduced within a minute. The advantage of the operation consists, not only in its simplicity, but in its not meddling with the swelling, the contents of which will be in a more or less inflamed condition. The proposer of this operation considers the principle applicable to umbilical and inguinal herniæ, and he (Mr. Coulson) had recently operated on this plan both in cases of umbilical and inguinal hernia. In umbilical hernia the operation is easily applicable, as an incision can be made either along the upper edge of the umbilical opening, or on the sides, and the stricture be divided without interfering with the tumour. In inguinal hernia, however, he (Mr. Coulson) thinks there will be occasionally, difficulties in applying the principle of this operation, owing to the variation in the seat of stricture and the size of the hernia. He considered the operation highly deserving of notice. It might almost be called a subcutaneous operation, as applied to femoral hernia, the incision not being required to be larger than to admit the point of the finger.

[Mr. Quain stated that his experience led him to agree with Mr. Luke. With respect to Mr. Coulson's observations, he said:]

It appeared in the description of the course of proceeding communicated by Mr. Coulson in his subsequent observations, that though the first incision was made near to, not over the hernia, yet that the deeper incisions—those to relieve the constriction—must have divided every fibre external to the sac; otherwise, indeed, the operation would be ineffectual. The sac thus was laid bare at its upper part; and the essential part, at least, of the operation was identical in principle with that brought under the notice of the Society by Mr. Luke. Moreover, supposing the stricture should happen to be seated in the neck of the sac itself, or that after the division of the structures surrounding it, at a given point, the hernia should continue irreducible (and how often it is so has been shown to-night), how, under such circumstances, could the operation be successful without interfering with the sac, and interfering largely too? For these reasons he could not agree with Mr. Coulson's opinion, that by operating in the manner he had described the peritonæal sac was not meddled with.

Med. Gaz., March 10, 1848, *p.* 425.

[An able paper upon this subject appears in the Monthly Journal for May, 1748, p. 769, from the pen of Dr. Pirrie, Regius Professor of Surgery at Marischal College. The Dr., while approving of Petit's operation on the whole, pronounces it quite unsuitable when the stricture is formed by the sac or within it, and this condition he believes of frequent occurrence.]

91.—ON THE USE OF THE TAXIS IN STRANGULATED HERNIA.—By Thomas Hunt, Esq., Herne Bay.

[Being called to a case of inguinal hernia, in a stout boy of two years old, which had been strangulated for a considerable time, and finding that there would be considerable difficulty in performing an operation: as there was no surgical assistance at hand. Mr. Hunt determined upon a resolute attempt at reduction. He says:]

I placed the patient on a table, with a mattress and pillow, of convenient height, on his back, with his legs bent, and the limb of the affected side directed over the other, and taking my seat on a high chair, so as to command the best use of my arms and hands. I commenced steady, gentle, and gradually increasing pressure on all sides of the tumour, and *in an hour and three quarters*, just as my strength was beginning to fail, I had the satisfaction of perceiving an evident decrease in its size, and in a few minutes heard the gurgling noise which preceded its return into the abdomen.

[Another case was that of an old man of 60 with strangulated inguinal hernia.]

The tumour had existed fourteen hours; it filled and distended the scrotum; it was twenty-five inches in circumference, and of course could only be partially covered by both my hands; it was tender, as well as the abdomen; and nausea, quick pulse, and sunken features, proclaimed the urgency of the case. The patient was laid on his back in bed, the muscles relaxed, and placing myself on my knees, supported by a pillow, I compressed the tumour with both hands, as one might squeeze a mop. In half an hour my hands were both paralysed, and no apparent result obtained. I then sent for my assistant, who took my place; meanwhile I supplied myself with O'Beirn's defæcation tube, as the next best resource, if the taxis should fail, and also some tartar-emetic. My assistant was tired in his turn; I resumed my laborious post, and in two hours from the commencement of the pressure, the tumour was evidently softer and smaller. The reduction was soon afterwards accomplished, and the patient had not one bad symptom.

Provincial Medical and Surgical Journal, April 5, 1848, *p.* 179.

[Mr. Thomas Pope, of Cleobury Mortimer, relates the following case:—An old woman of 70, who had been the subject of hernia for twenty years, got it strangulated on Tuesday, the 8th of February. Mr. Pope was sent for, and after the taxis, and various other means were tried, he proposed the operation, to which she would not agree.]

"On Saturday," says Mr. Pope, "I was again summoned to her, while I was reading Mr. Hunt's letter, which made so forcible an impression on me, that after re-reading it, I hastened to my patient, persuaded of the true philosophy of Mr. Hunt's reasoning, as it explained to me why I had succeeded in a case which was fresh in my recollection. On reaching the house I found the woman with every symptom aggravated, and the abdomen very tympanitic, and every appearance of the near approach of mortification, which I concluded was inevitable, particularly on hearing of the force employed the day before. The hernia was so exquisitely tender, that I had the greatest difficulty to persuade her to permit me even to touch it; at last I prevailed, and commenced very gently, "not by pushing, and kneading, and thumbing, but by gentle equable compression on all sides of the tumour, the abdominal and psoas muscles being previously relaxed," so as gradually to empty the distended veins; and I was determined to proceed, confident of effecting the return of the contents of the sac, though I had every reason to anticipate mortification, as before observed. After the lapse of an hour and a half she ceased moaning; the sickness and hiccough abated, and the hernia was softer, and soon after I felt a motion in it, and in another hour reduction was effected. I now administered an enema, which went up easily, and remained about five minutes, and returned uncoloured, but before a half an hour she had three large fæculent motions, with a considerable discharge of flatus.

Provincial Medical and Surgical Journal, April 5, 1848, *p.* 180.

92.—CHLOROFORM IN A CASE OF STRANGULATED HERNIA.—By Dr. J. S. Hughes, Surgeon of the Jervis-street Hospital, Dublin.

[This was a case of strangulated femoral hernia of six days duration, occurring in a woman 42 years of age. The taxis was tried while the patient was under the influence of chloroform, but without success. Dr. Hughes thus relates the further proceedings:]

The taxis having failed, the operation was at once commenced by making a T-shaped incision, the transverse portion of it corresponding to the neck the hernia, and parallel to Poupart's ligament, the flaps were then dissected back, the superficial fascia was next divided to the same extent as the perpendicular incision, which exposed the fascia propria much thickened beneath, which, being carefully divided on a director, laid bare the hernial sac. The sac was then opened by raising a small portion of it on its lower and anterior surface, so as to exclude any portion of the intestine. An aperture of sufficient size to admit the director was made by the knife, held horizontally, into the elevated portion, after which about a half an ounce of straw-coloured serum escaped. The director having been introduced, the sac was divided on it upwards and downwards. The sac contained intestine only, which was of a dark chocolate colour. Recent adhesions had taken place between the intestine and a portion of the sac, especially about the neck, which having been gently broken up with the finger, the intestine was carefully examined and found in a fit state for returning. The finger carried up to the crural ring, which felt tight. The patient being now free from the influence of the first application of the chloroform, became very restless, forcibly using the abdominal muscles. Dry retching and straining having ensued, the chloroform was then exhibited a second time as before.

The patient became fully insensible after a very few seconds, the vomiting and straining having ceased. When on applying equable pressure on the intestine in the proper direction, it went up with a loud gurgling noise *without the necessity of dividing the stricture.* The ends of two fingers could easily be introduced into the crural ring after the reduction of the intestine. The patient experienced immediate relief after the operation, the vomiting and hiccough disappeared, and in about two hours and a half after the operation, she had two copious evacuations from the bowels.

[Dr. H. thinks that the exhibition of chloroform was of great use in the above case, though it is not the first time that reduction of a hernia has been accomplished after breaking up adhesions, without dividing the stricture.]

Dublin Med. Press, Jan. 5, 1848, p. 1.

Mr. Lafargue relates a case of femoral hernia which had been strangulated for upwards of fifty hours, and which could not be reduced by the taxis, aided as it was by enemata and the application of ice. In consultation it was determined to try chloroform.]

Mr. Parsons poured from twenty to thirty drops on a handkerchief, which he immediately applied to the mouth and nostrils, while I endeavored to return the strangulated part. The first inhalation—a deep one—was followed by a fit of coughing, as likewise the second—not so deep. At the third, a strong inhalation, which she appeared to aid by pressing with her hands the kerchief to her face, she became instantaneously insensible, and in a few moments without any difficulty, I reduced the hernia. In fact, after slight pressure, it appeared to dart through the canal into the abdominal cavity like a shot. During the state of insensibility, the patient's eyes were fixed and staring; face rigid and rather flushed; the hands, which before pressed the handkerchief, fell upon the chest motionless, and there was no rigidity of the extremities. Immediately on recovering (the state of insensibility not lasting more than a minute or two), the pulse was ninety, her face and countenance became natural, and she stated, that though she was conscious of what was going forward around her, she felt no inconvenience, but merely a sensation of something passing into her abdomen, suddenly and violently, without pain. *Lancet, Feb. 19, 1848, p. 210.*

93.—ON THE OPERATION FOR HERNIA.—By J. Gay, Esq., Surgeon to the Royal Free Hospital.

[After relating a series of cases of hernia, Mr. Gay says,—]

In all cases of strangulated hernia there is no doubt that the immediate care of the surgeon should be to free the incarcerated bowel. But the ultimate success of this step does not wholly depend upon its being skilfully and promptly effected, but upon certain complications which have been generally too much disregarded; but which are strikingly brought under our notice in the cases now under consideration. Operations for hernia are most frequently required to be performed in persons of advanced life, when the vital powers are, to a certain degree, under the control of tendencies to, if not of acquired, organic disease: and thereby limited in their capacity of restoring to health parts injured by accident or operation. In four individuals the hernial protrusion took place under very similar circumstances; the difference in the length of time during which the strangulation continued was not so great as to constitute an important item in the calculation as to the chances of recovery; the operation was so nearly the same in each case, and was, as far as my memory serves, performed with such equal facility, that its influence towards a favourable or unfavourable result could not be much greater in the one than in the other; and still the results were widely different. The reasons were obvious: in two cases there was valvular disease of the heart; in another, bronchitis; in a third, no perceptible lesion of any other than the parts concerned in the hernia. Hence the importance in such cases of carefully scrutinizing the patient prior to the operation, for the purpose of ascertaining the amount and seat of any organic disease that may coexist; for upon that must the issue, to a very great degree, depend. But this is not the only advantage; a knowledge of these circumstances is eminently necessary to guide the surgeon in the kind of operation which he would select, as well as of the treatment which he would subsequently adopt.

For instance, in the second case, as in the first, the aortic valves, owing to their diseased condition, prevented an adequate supply of blood from passing into the arteries of the greater circulating system; and thereby the powers of restoration, in parts already enfeebled by strangulation, were seriously impaired. Hence the sac and portion of intestine in one case, and the sac in the other, sloughed. But the chances of ultimate recovery differed again in these cases. In the first, after the sloughing both of sac and intestine, there was, in the disposition of the parts, every preparation for, and tendency to, complete recovery; but the systemic powers were unequal to the tedious task. In the second, the sloughing of the sac was immediately followed by death from purulent effusion into the peritoneal cavity. The chances of sloughing were about equal in both cases; but in the one the sac was opened, and free passage for the discharge of the unhealthy secretions permitted, whilst in the other the sac was left unopened, and the secretions took a wrong and mortal course.

From these considerations, then, it appears—

1st. That in cases of hernia (and the remark applies generally to all surgical operations) the success of operations must depend mainly upon the coexisting state of the organs of the body in relation to health or disease.

2d. That the chances of success depend, in case of coexistent disease in some organ, upon the degree of importance which the affected organ holds, in reference to the maintenance of the vital functions generally. Thus, as in the third case, an affection of the bronchi, although it retarded recovery, appears to have been of less consequence than diseases directly involving the organs of circulation.

3rd. As a rule, probably it might be laid down, that in all cases where organic disease exists, so as to render a severe depression of the vital powers, after the operation, likely to accrue, *the sac should be opened, and a free passage left for discharges, should such an occurrence as sloughing, either of the bowel or sac, take place.* In operating for hernia, after determining the *seat* of stricture, its division will be much more easily and successfully accomplished, if, instead of cutting down (as books generally direct) on the tumour, the incision *be made on one side, directly over the part where the stricture will have to be divided.* *Lancet, Dec.* 11, 1847, *p.* 623.

94.—CASE OF STRANGULATED UMBILICAL HERNIA OPERATED UPON AFTER MR. GAY'S METHOD.—By G. B. Childs, Esq.

[A very corpulent woman, 35 years of age, was the patient. The hernia was of large size, and had become strangulated during the previous night.]

In the presence of Mr. Coulson, Mr. Childs proceeded to operate, assisted by Mr. Goude and Mr. Clarke, after the vapor of chloroform had been administered, so as to bring the patient fully under its influence. A wound through the integuments and superficial fascia, not more than an inch in length, was made on the right side, just beyond the edge of the hernial mass. The finger was directed through the wound, and after separating some few bands of cellular and other tissues, which feebly obstructed its course, the neck of the sac was reached, at a depth of at least four inches. The umbilical ring forming the stricture was then felt gripping the neck of the sac, to which it was adherent, by means of some strong bands. These were broken down with the point of the finger, but not without some difficulty, owing to the great quantity of fat and consequent depth of the wound. A director was then insinuated between the sac and the ring, guided by the finger, which still remained in the wound, and the stricture divided. After breaking down some further adhesions, the parts were liberated, and the contents of the sac immediately returned. The patient had her usual truss applied at once, and no bad symptoms occurred to prevent her complete recovery.

The usual fatality attending operations for umbilical hernia would, in the prognosis of the present case, have excited grave doubts as to the result, had the old operation been adopted; and Mr. Childs cannot but think that the simplicity of the principle upon which the new operation is based, the little difficulty, in ordinary cases, of practising it, and the lessened probability of its being followed by any severe symptoms, form very decided arguments in its favor. *Lancet, March* 18, 1848, *p.* 308.

95.—MODE OF ARRESTING BLEEDING AFTER THE EXCISION OF INTERNAL HÆMORRHOIDS.—By J. P. Vincent, Esq.

Surgeons have for the most part, been deterred, on account of the bleeding that has often followed, from cutting them off. But it must be remembered, that if there be any coagulum left in the tumour after the incision, it will go on bleeding: and I believe that very generally this is the way by which the bleeding is kept up after the pile has been excised, which may have given rise to the great apprehension of hemorrhage in these operations. I have, with few exceptions, adopted the operation of excising internal piles, and with the precaution and the use of an expedient I have now to mention, I have never been troubled with any serious extent of bleeding. This remedy is simply a solution of sulphate of iron in water; a grain to an ounce seems quite strong enough. If this be injected in small quantity, so that it may be retained after the operation, I believe it will hardly ever fail of preventing bleeding. I consider the advantages of excision over tying to be, that the operation is completed at one suffering, and is almost instantaneously executed. That the wounds being simple, when the membrane is restored to its proper place, there is the better chance of the adhesive process being so far carried out as ultimately to retain the membrane in its place, and prevent the continuation of the protrusion, if straining on the parts can be prevented for three days. Indeed, I have seen the prolapse quite cured by the excision. In either case the operation should be restricted to the mere pile, and not include any part of the membrane around it. I have occasionally, at the instance of patients, tied piles, but have found the pain more severe, and the swelling and soreness in the succeeding days after the operation have produced greater suffering, and the parts have seemed more readily to be protruded by the dejections than after the excision.—*Observations on some parts of Surgical Practice.*

Ed. Monthly Jour., (*Monthly Retrospect,*) *March* 1848, *p.* 41.

96.—ON THE TREATMENT OF PROLAPSUS ANI.—By J. P. Vincent, Esq.

Of late I have found such great advantage in employing the sulphate of iron in prolapsed bowel, that the operation may very often be dispensed with, and the patient quite cured merely with the use of this remedy. Very lately I had in the hospital two cases of the worst sort,—the one of twenty years' standing, with a great protrusion and abundance of bleeding piles, who in about three weeks left without any protrusion or bleeding: declaring himself to be in a state of comfort that he had not known for so long a time. The other came from one of the institutions that offer great pretensions in the treatment of this class of cases. He was very bad, having both internal and external piles, and the bowel descending largely and most readily: he was completely relieved in about a month. Other cases of a slighter kind have been set to rights in not much more than a week. The patient should be kept in bed of course, so that there should be every facility for the repose of the bowel; and after it is cleansed out, a small quantity of the injection should be daily thrown up, and retained. If the stomach can take balsams, they seem well adapted for this disease.—*Observations on some parts of Surgical Practice.*

Edin. Monthly Jour., (*Monthly Retrospect*,) *March*, 1848, *p.* 41.

97.—TREATMENT OF PILES AND PROLAPSUS ANI.—By J. Taylor, Esq.

[Mr. Taylor treated the following case by the temporary ligature, and the rectum pessary. He says:]

There was complete prolapsus, and on the prolapsed membrane were seen three hæmorrhoids, each about the size of a large grape. Around the base of each tumour I applied, successively, a strong ligature of waxed silk, embracing as much of the subjacent mucous membrane as I possibly could. I held them tightly for about twenty minutes; the ligatures was then removed, and the parts retained. She did not complain much during the operation. The patient was put to bed, and an anodyne administered, and repeated for three successive nights. The bowels were not permitted to act for three days. On the fourth day she took an aperient, which caused some uneasiness during its operation; and she complained of the parts being very sore, but there was no constitutional disturbance. The nurse retained the prolapsus without difficulty, and reported the extrusion to be smaller. The anodyne was repeated every night for a week, and an aperient every third day. On inspection, the hæmorrhoids had then nearly disappeared, and the prolapsus was much smaller; ecchymosis still visible on the ligatured parts, surrounded by a red blush, as if adhesive inflammation were going on. The same measures were persisted in for another week, when the patient was found occupied with her domestic duties, gratified with the success of the treatment, and so greatly improved and delighted, that she said it was not neccessary to examine her, as there was nothing to be seen except when at stool, and then only a very small portion was prolapsed, which she could return without difficulty.

Previously to this simple operation, whenever she arose suddenly from her seat, or hastily walked across the room, the parts would protrude with much pain. Walking out of doors was what she had for a considerable time been a stranger to; wherever she went she must ride. Now she can walk a distance of two miles with very trifling inconvenience, and certainly without any protrusion. Still there was some prolapsus on going to stool; for the relief of which she was directed to use the rectum pessary after each motion, and to retain it in the bowel for the space of five or ten minutes. This was found, after a fortnight's trial, to be a valuable auxiliary, as its pressure tended greatly to consolidate the relaxed membrane, and thus to relieve the slight inconvenience which she felt on going to stool.

Lancet, Feb. 5, 1848, *p.* 153.

98.—CURIOUS CASE OF RECTO URETHRAL FISTULA.—By F. F. Girau Faversham.

[A man, 59 years of age, had been for some time subject to diffic voiding fæces, and found that flatus and fæculent matter passed by thra. On examination a stricture was found about three inches up tum, and it was supposed that there was a fistulous commun between the rectum and the membranous portion of the urethra. By Brodie's advice no treatment was adopted except the daily passag rectum bougie. Mr. Giraud says:]

An improvement slowly took place in the state of the rectum, and the calibre of the gut has become almost restored to its natural size fistulous communication between the rectum and the urethra remai same, and a few weeks ago an unusual irritation was felt in the ureth very soon something alive made its appearance at the orifice; the removed it with his finger. On placing it in a wine glass half fille warm water, the movements it exhibited shewed great activity, and alternate contraction and dilatation of its rings, and the protrusion o ginated proboscis, it soon arrived at the edge of the glass. It app be a species of Echinorhyncus. Questions may arise, whether a creature to this might have occasioned the fistulous opening betwe rectum and the urethra, and whether the stricture in the gut which nearly at an end, might not have originated from the local irritation.

Prov. Med. and Sur. Jour., Feb. 23, 1848

99.—ON IRRITABLE ULCER OF THE RECTUM.—By Bransby Coop F.R.S., &c.

Mr. B. Cooper, in a lecture in the Medical Gazette, describes ver ly this painful form of disease—painful to the patient, and sometin less so by its obstinacy to the practitioner. Speaking of irritable u says,—Such a condition of ulcer not unfrequently attacks the rectun the form of a narrow elongated fissure running along one of the fold mucous membrane, near to the orifice of the anus. The edges of sure are free from any callosity, and it bears a strong resemblance cracks which frequently affect the lips. The most usual situation ulcer, as far as my experience goes, is at the posterior aspect of the in the mesial line, although I have sometimes found it on the side bowel. The ulcer may involve merely the edge of the verge of th or extend a considerable way up the intestine, but may always be d by passing the finger into the rectum, when the nature of the sore is appreciated by the extreme pain which the patient experiences dire finger comes in contact with the fissure.

The symptoms of the disease are highly characteristic; a burni is experienced during the act of defæcation, which continues for derable time after each evacuation. During the intervals the pat joys comparative ease, but still occasionally suffers from heat and ing pain about the anus, but nothing to be compared to the agony p by the passage of the fæces over the ulcerated surface and thro sphincter, and which is commonly more or less in a state of spasmo traction. The bowels are in these cases generally constipated; n symptom involves the question as to whether this constipation is duced rather by the unwillingness of the patient to evacuate his than from any derangement of function? The best, and, indeed, t positive evidence of the disease, is the introduction of the finger rectum, which, on being withdrawn, will be marked with a streak o and lead to the discovery of the size and position of the ulcer.

If the disease be allowed to remain for any considerable time, tient's health becomes seriously affected by the constant sufferi from the countenance one might suppose that the disease was of a malignant character. The digestive functions become deranged; the appetite fails; the slightest exertion, such as the act of coughing or blowing the nose, is sufficient to excite the pain; and any excess of diet is sure to aggravate all the symptoms. Although this distressing affection will not yield to the remedies recommended in irritable ulcers in other parts of the body, its treatment is fortunately very simple. It consists in passing the forefinger of the left hand up to the ulcer, and directing along it a straight probe-pointed bistoury beyond the very extremity of the fissure; then, turning the cutting edge towards the sore, you divide the ulcerated surface, as well as the fibres of the sphincter muscle, which are connected to its submucous aspects.

This procedure is usually sufficient; but if there be any reason to believe that suppuration has taken place in the cellular membrane beneath, the incision should be continued so as to divide the verge of the anus, and thus insure a free exit for the matter. In the after-treatment, I strongly recommend (when the patient has recovered the effects of the operation) that he be directed to acquire the habit of evacuating the bowels at bed-time, instead of in the morning, so as to secure the six or eight hours' subsequent recumbent posture, and the certain receding of the rectum into the pelvis, which does not occur in a diseased state of this bowel if the patient follows his daily avocations immediately after the act of defæcation. This disease I have certainly found more frequent in females than in males, and to prevail rather in the higher than in the humbler classes of life. It is to Mr. Copland that I am indebted for a knowledge of this disease, as well as for the operation, which I believe I may describe as almost infallible as a means of cure. *Lancet, Nov.* 27, 1847, *p.* 576.

180.—TREATMENT OF THE ABSCESSES WHICH PRECEDE FISTULA IN ANO. —By P. J. Vincent, Esq.

I have many opportunities of treating those previous abscesses from which fistulæ in ano are formed. In that mass of adipose substance filling up the ischio-coccygeal space, the patient's notice is perhaps drawn to a deep tumour, just differing in substance enough to be clearly distinguishable from the surrounding structure, of a doughy consistence, little sensible, and not at all rising to the level of the surface. This is, I apprehend, the first abscess in its earliest state, which, if allowed to go on, will end in the genuine fistula in ano. I have had such cases in the hospital, and have no doubt that this is the fact, as I have compared these sort of swellings with other presentations in a more advanced stage in the formation of fistulæ. The practice to be adopted is unhesitatingly pointed out: this lumpy mass is to be transfixed; and this I have done the very first moment the case has been presented to me. I plunge a knife down to the very centre of the mass, and then I have found a small quantity of pus come out; and upon passing my finger down (and the opening should always be large enough to admit this part), I have found in the centre of the mass a small cavity of the peculiar pulpy feel that is familiar to surgeons as the interior of an abscess. This prompt measure stops all further progress of the abscess, which otherwise would lead its way either to the rectum or to the surface, and terminate in fistula. The course of these abscesses, when opened, is to close, and finally heal; but the surgeon must not expect that they will heal with the readiness of ordinary active abscesses. *Med. Gaz., March* 3, 1848, *p.* 388.

URINARY ORGANS.

181.—ON LITHOTOMY, AS PERFORMED WITH A RECTANGULAR STAFF.— By Professor Buchanan, Glasgow.

[Dr. Buchanan has been engaged in an attempt to modify the operation of lithotomy, originating in an endeavor to obviate the difficulties of Dupuytren's bilateral operation. In order to understand the object of Dr. B's attempts, we must remember the principal steps of that operation.]

The external incision extends across the perineum in the form of a curve, of which the concavity looks backward, the summit intersecting the raphe or middle line of the perineum, at the distance of from six to nine lines from the anus, while the extremities of it are from eight to ten lines distant from the middle line on either side.

The summit or middle of the curve, corresponds to the central tendon of the perineum, or tendinous junction of the sphincter ani with the other perineal muscles. The muscular fibres attached to this tendon being divided, the membranous part of the urethra is exposed and opened. The point of the double lithotome is then introduced into the groove of the staff and passed onward into the urinary bladder, where, the blades of the lithotome being expanded, it is drawn outward and downward, dividing the prostate gland, and the more external muscular parts, in its passage towards the extremities of the first incision.

[The difficulty is to reach the membranous part of the urethra from the middle line of the perineum, without injury to the bulb above or the rectum below. It is needless to follow Dr. Buchanan in his account of his experiments to overcome this difficulty; suffice it to say that they ultimately led him to use a staff *bent at a right angle three inches from the point*, by which he was enabled to depress the rectum from the track of the wound. He says,]

When this staff is introduced into the bladder, the lower or grooved branch of it lies parallel to the rectum, the angle resting on the farthest extremity of the membranous, or rather the commencement of the prostatic part of the urethra; so that, when the knife is plunged into the groove of the staff, the membranous part of the canal escapes all injury,—the incision commencing at the apex of the prostate gland, and being continued along the side of it to the bladder. This new staff, therefore, while it possessed all the advantages of the former one, had the additional recommendation of doing less violence to the urethra. It enabled me also, to effect several important alterations in the steps of the operation, and to simplify the apparatus for performing it. The point at which the knife penetrated into the groove of the staff being now much lower, or immediately above the anal orifice, the direction of the external incisions was somewhat changed. They were, at first, quite horizontal, but acquired an inclination downwards as they extended to the outside, towards the ischiatic tuberosities. Further, as the knife was at once plunged into the substance of the prostate gland dividing first the one side and then the other, at the same time that it made the external incisions, there was clearly no longer any use for the prostate knife, which I was thus enabled to dispense with. I did not, however, at first perceive this advantage, and intended to have used the prostate knife in case second, narrated below, had I not been prevented from doing so by an accident.

Last of all, as I found that a moderate incision of one side of the prostate and perineum was sufficient to extract a stone of ordinary dimensions, I abandoned the bilateral section in all ordinary circumstances, and had only recourse to it in certain cases, to be hereafter specified. It must not be supposed, however, that in thus abandoning the double section of the perineum and prostate, it was at the sacrifice of any of the advantages which Dupuytren has justly enumerated as belonging to his bilateral operation; for, if these advantages be analysed, it will be found that they depend on two causes; and that of these, that which here remains untouched is the most important and generally applicable,—the direct and short path of access to the bladder; while the other source of advantage,—the double section of the perineum and prostate,—is only important in particular circumstances of rare occurrence.

As this new staff was first constructed, it had an inferior groove, but I found this attended with several disadvantages; for, whether the groove were made deep or shallow, and whether the knife employed were spear-pointed or with a broad shoulder, and whether it had a single or double edge, it was apt, if carried deep into the groove of the staff beyond the verumontanum, to injure the seminal duct and vesicles, and the resulting incisions were often ragged and irregular. I accordingly abandoned this inferior groove, and tried grooves of a different kind—as, a lateral groove, a groove looking outward and downward, and a spiral groove, commencing below, and twining gradually round to the side, as it passed inwards. The result of all these trials, was to make me finally prefer a lateral groove having a posterior opening, so that the point of the knife might pass directly into it from the perineum.

By the use of this instrument, a new route, previously inaccessible, is opened up into the urinary bladder. The knife passes inwards, in a straight line parallel to the anterior surface of the rectum. If we suppose a triangle formed, of which the apex of the prostate is the superior angle, the anterior coats of the rectum and the membranous part of the urethra the sides, and the fore part of the sphincter ani the base, then will the line in which the knife penetrates to the apex of the prostate, be very nearly the line dividing the above triangle into two equal parts. The tissues divided by the incision are the skin, the anterior fibres of the sphincter ani, the superficial perineal fascia, and the most anterior fibres of the levator ani, where they meet under the urethra on the fore part of the rectum. The descending fibres of the levator ani, which are divided in the lateral operation, remain here uninjured. It is chiefly at the outer and lower side of the prostate gland that the muscular mass above defined is incised; for the apex of the gland lies so immediately over the verge of the anus, that the knife at once plunges into the substance of the gland. There is, therefore, not the least danger of wounding the rectum; for, not only is it defended by the lower side of the groove of the staff, but the mass of the gland, progressively increasing in thickness as the knife goes inwards, intervenes; and, more externally, there is a layer of muscular substance of considerable depth. It is also obvious that the knife is far distant from all the large bloodvessels of the perineum.

[To all operations in which we penetrate into the bladder from the middle line of the perineum, Dr. Buchanan would give the name of *mesial*, as distinguishing them from the *lateral* operations. In the mesial operations again, we may cut both sides of the perineum and prostate, or only one; hence we have the *mesial bilateral* and the *mesial unilateral* operations. In the majority of cases the latter operation is preferable; it is thus described:—]

The only instruments necessary for this operations are the rectangular staff, which has already been described; and the knife, which ought to have a cutting edge as long as the groove of the staff, with the back straight and the blade of uniform breadth as far as the point, which should be shaped like that of a scalpel, but fitted to stab as well as cut.

The operator having introduced the staff into the bladder, which is done without difficulty, places the forefinger of his left hand in the rectum, and feels for the horizontal branch of the staff lying over the protsate. He then moves the staff backwards and forwards, till he feels the prominent angle, which guides him in making the orifice of the groove project in the perineum, at the anterior verge of the anus; or just at that point of the raphe, where the skin begins to lose its proper characters, and gradually assume those of mucous membrane. Keeping the staff steady in this position, by means of the forefinger placed within the rectum, and the thumb pressing on it externally so as to indicate the orifice of the groove, he commits the staff to an assistant, with directions to keep it in the same position, and press downward with a moderate degree of firmness, of which, from the instrument resting upon his own fingers, he is enabled to judge. He now takes the knife into his right hand, holding it in what is technically named the third position, with the palm of the hand looking obliquely upward, while the blade of the knife is horizontal, and the edge turned to the left side. He penetrates through the skin and other tissues, till he feels that the point of the knife is within the groove, when he carries it directly onward, till it is arrested at the termination of the groove. As he has now penetrated into the bladder, there is usually a little urine seen to ooze out along the blade of the knife. He finishes the cutting part of the operation, by withdrawing the knife, so as to cut first three quarters of an inch outwards and downwards, in the direction of the fore-part of the tuberosity of the ischium, and thereafter three-eighths of an inch almost directly downwards.

The total extent of the external incision is thus one inch and an eighth; but, owing to the vicinity of the anal aperture, and the cut parts subsiding in that direction, the incision is quite sufficiently large to permit a stone of considerable size to be easily extracted; for full advantage is taken of the natural apertures in enlarging the wound, the aperture of the bladder coinciding with it internally, and that of the rectum externally.

[Without moving the staff, the finger is now to be passed above its horizontal branch into the bladder, and the size of the stone ascertained; if it be small, it may be extracted, if larger, the opening may be dilated, or, if dilatation will not be sufficient, a more ample incision will be required.]

The question as to the direction of the additional incision, is an important one. It may be thought that, as the wound of the left side of the prostate is of less size than is usually made in the common lateral operation, it would be advisable to cut the prostate more extensively on that side. It seems to me, however, that there would, in this way, be considerable risk of infiltration of urine behind the fibres of the levator ani muscle, which are less freely divided than in the lateral operation. I would, therefore, prefer dividing the right side of the prostate, which is easily done, by shifting the staff a little to the left, passing the knife on the right side of the staff, and guiding the point of it with the finger, along the top of the horizontal branch, into the bladder. The staff being now replaced, and the knife being held in the left hand, while the finger of the right rests on the point of it within the bladder, the blade is made to advance with a sawing motion towards the right, keeping parallel to itself, so as not to make the external incision unnecessarily large. A narrow probe-pointed bistoury may also be employed to divide the prostate and perineum on the right side. After this incision, I should be disposed to try dilatation again, if there was any hope of succeeding in that way, rather than cut the prostate more extensively on either side. If, however, the stone be of very large size, then all risks must be run, and the wound of the prostate enlarged on one or on both sides, so as to permit its extraction.

In extracting the stone, it is best to introduce the forceps, and lay hold of it before removing the staff, which serves as a guide to the forceps, and prevents the neck of the bladder from receding into the pelvis before the stone be secured. Particular attention should also be paid to the position of the patient. The upper part of the pelvis should be raised by a pillow placed under the loins, so as to make the lower brim look obliquely downward: the stone thus descends toward the wound, instead of rolling back into the body of the bladder, as when the patient lies flat upon his back, with the whole pelvis raised. It is also, according to my views, right to have very little urine in the bladder at the time of the operation, so that the cavity may be contracted, and the stone may not be covered by any folds of the relaxed coats of the bladder.

The above operation may be said to be one half of the bilateral, and its less degree of severity is its recommendation. There are, however, certain cases in which the bilateral operation is to be preferred. Such cases are of two kinds, first, the cases alluded to above, of adults having a large stone; and, second, the cases of very young children, whatever may be the size of the stone; for, in such young subjects, from the small size of the parts to be cut, a wound of one size of the prostate, capable of admitting freely the finger of a full-grown man, must, of necessity, be relatively large. In cases of the first kind, I would perform the first half of the operation exactly in the way described above; and after feeling the size of the stone with the finger, I would cut the opposite side of the prostate and perienum to such an extent as might be required.

The incision of the two sides of the prostate is thus made symmetrically, while the external incision is larger on the left side than on the right. In young children, again, I would prefer making both the internal and the external incisions perfectly symmetrical, and would limit the extent of the latter, on each side of the middle line, to about half an inch; for, from the subsidence of the anterior coats of the rectum, the opening thus made is as ample as can be required. The inclination of the internal incisions downwards is so slight, that on the healing of the wound the cicatrice appears a straight line. This is exactly the operation that was performed in case second, narrated below—only in that operation a staff with an inferior groove was employed, of which I was not then fully aware of the disadvantages. I would now prefer making use of a staff with a lateral groove, and after penetrating into the bladder and left side of the prostate and perineum with the lithotomy knife, using a probe-pointed bistoury to make the incision on the right side.

The prostate, in both these operations, is found to be cut in the very same direction as is commonly recommended in the lateral operation—outward and a little backward from the apex, or in a direction parallel to that of the vesiculæ seminales. This coincidence is not a little remarkable, considering the total difference of the mechanism by which the section is effected. In the lateral operation, the lower half of the prostate which is to be cut lies horizontally, with the staff not pressing upon but a little raised from it, the upper half of the gland being hooked up under the arch of the pubis. Now, in cutting the prostate, the handle of the knife is depressed and held to the left side, as the point of it is pushed along the groove of the staff: the consequence is, that the section is intermediate between the vertical section which would be made if the edge of the knife were held straight downward, and the horizontal section which would result from holding it, on the level of the gland, to the left side. In the operations here described, again, the blade of the knife, while it cuts the prostate, is held almost horizontally, and did the gland itself lie in the horizontal plane, the section would be directly outward; but from the lower half of the gland not lying horizontally, but being pressed obliquely downward by the staff resting on the middle of it, and thus presenting on each side a sloping surface to the edge of the knife, the incision comes to be made in exactly the same direction as before. But though the direction is the same, the sections themselves are somewhat different. In the lateral section, the substance of the gland and the fibrous covering investing it are incised, exactly to the same extent; but, in the operations here under consideration it is only the anterior half of the gland that is cut through and through, for the section of the posterior half does not go through the whole depth of its substance, and spares the fibrous indusium and adjacent cellular membrane. This circumstance seems to me important, both as guarding against infiltration, and facilitating dilatation, should it be required.

There is one precaution, with respect to the use of the staff, which must not be passed over. On whatever point of the urethra, situated beyond the bulb, the angle of the staff is made to rest, that point is forced outward before it, and made to project in the perineum. Now, the point at which the angle ought to be made to rest is the apex of the prostate: it may rest a little farther onward, without disadvantage; but if it goes as far as the verumontanum, the ejaculatory duct will be injured: and if it be placed farther inward still, the bladder will be opened, through the substance of the prostate, without entering the urethra at all. This happened to me, more than once, in operating on the dead subject, before I understood the reason of it. I found that, without intending it, I had performed exactly the Celsian operation, forcing down the prostate before the angle of the staff, just as it is forced down before the stone in cutting upon the gripe. It is, therefore, an important rule, after introducing the staff, to feel that the body of the prostate intervenes between the finger in the rectum and the horizontal branch of the staff.

In the first place, I would say, that the mesial operations are more direct, and more easy and rapid of performance. The common object of all these operations is to reach the apex of the prostate gland, in order to incise it. Now, I would ask, if this is not done in the most direct and natural way in the operations described above. The point of the prostate is not above two lines distant from the posterior extremity of the raphe of the perineum; and by merely piercing the skin and fibres of the sphincter muscle, the knife comes immediately into contact with it, and, entering the groove of the staff, cuts one side of the gland as it goes along into the bladder. In the lateral operation the prostate is also cut; but by how circuitous a route is the knife made to penetrate to the apex of the gland! In the first place, an incision, from two to three inches in length, is made along the side of the perineum; but this incision does not reach the apex of the prostate. which is almost an inch distant from the nearest part of it; so that after a second incision, dividing the fibres of the levator ani muscle, the knife is carried about an inch inward out of sight, being hid behind the skin and the anterior sac of the rectum, and then it reaches not the apex of the prostate, but the membranous part of the urethra, which it is quite unnecessary to cut at all; and, after cutting it, the knife at length arrives at the apex of the prostate, which, it has been seen, might have been reached by travelling just two lines from the surface of the skin. This is much the same as if a person in going into his own house, instead of opening the door to get into the passage behind, were to make a breach in the wall to the right hand, and getting into the adjoining apartment, were to make his way thence through the intervening partition, taking care, however, to penetrate through the partition near the roof, so that he might descend into the passage from above.

The lateral operation was obviously devised under the idea, that the rectum presented an insuperable obstacle to penetrating into the bladder directly from the middle of the perineum. The operator is, therefore, made to travel round the obstacle from the left, and get in behind it; in Dupuytren's operation, again he ascends over the top of it; while, in the operations here described, the obstacle being pressed out of the way, he passes straight forwards into the bladder.

In the second place, The lateral operation is unnecessarily severe. This is chiefly owing to the external incision being so far distant from the neck of the bladder; for it is only by making that incision of large size, that the finger and instruments can be introduced so deep, whence the great disproportion between the external and the internal incisions, although the latter is large enough to allow the passage of the stone. The wound of the membranous part of the urethra is also unnecessary, as already mentioned.

In the third place, There is more danger of hemorrhage in the lateral operation; for as the two first incisions are nearly parallel to the great artery supplying the perineum, and sending its branches transversely inwards for that purpose, they must run almost at right angles to these branches, and are therefore in the direction most likely to do them injury. In the other operations again, the incision is far out of the course of all blood vessels of importance.

Fourthly, The rectum, notwithstanding the vicinity of the incision to it, is less likely to be injured in the mesial operation than in the lateral; the reasons for which I have already endeavored to explain.

Lastly, There seems to me to be more risk of deep-seated infiltration of urine in the lateral, than in the mesial operations. This is a question that can only be decided by experience; but the size of the wound of the prostate, and the extensive division of the fibres of the levator ani muscle, seem likely to occasion that result. *Monthly Jour., Feb.,* 1848, *p.* 556.

122.—CASE OF SACCULATED OR ENCYSTED CALCULUS.—By Professor MILLER.

[The patient was sixty years old, and required a good dead of palliative treatment before he was in a fit state to be cut. The lateral operation was performed, and a stone extracted, which, by its shape, indicated the existence of another. Professor Miller says:—]

Forceps, reintroduced, found nothing; but the Searcher soon detected a second calculus. Again using the forceps, sometimes as a sound, and sometimes as forceps, I could make no seizure; often coming in contact with the stone, but never being able to include it in my grasp. I changed the forceps once and again, using different sizes and forms; but with a like want of success. At length, fearful of the patient becoming exhausted, and anxious that he should not suffer harm by unnecessary protraction of the operation, if that could possibly be avoided, I rose and requested my colleague, Dr. Duncan, then kindly assisting me, to take my place, hopeful that a fresh hand and head might prove successful. To my urgency he assented; but, after skilful and patient use of the instrument, the result was no better than before. The stone could be felt (because impinged upon), but not laid hold of. We became quite satisfied that it was firmly grasped, and protected by the bladder; either sacculated or encysted—we could not tell which; for it was far from the point of the finger, and could be reached only by the instruments introduced. Dr. Duncan, Dr. Dunsmure, and others around, strongly urged me to cease from further extractive efforts; and to make the case one "a deux temps"—a form of operation I had hoped never to see, far less to be personally engaged in. To this proposal I reluctantly gave my assent; and sitting down, introduced the canula into the wound, with a view to the patient being forthwith removed to bed. The tube I employ happens to be larger and longer than that ordinarily used; and, in pushing it home, its end struck so heavily and plainly on the stone, that it engendered within me a desire for a renewed attempt at extraction, so strong as to be quite irresistible. Accordingly I withdrew the tube, and resumed the forceps. I got hold of the stone; but, plainly, soft parts were included in the instrument's grasp. Aware of this, I held very gently, and endeavoured to bring all down to within the reach of my finger, in order that I might thereby detach the soft parts and retain the stone. Just as I thought I had succeeded, I failed; the stone slipped, and went back again to its former obscure abode. Fortunately, however, I at once obtained a second seizure; and holding the instrument more firmly than before, I succeeded with the point of my left forefinger in detaching the soft parts from the stone, pushing them backwards, first on one side and then on the other, until I could feel the blades of the forceps in contact with the hard stone; and then, in the ordinary way, extraction was soon completed. The patient had been about twenty minutes on the table; but did not seem greatly exhausted. There was no hemorrhage. The large sized tube, already mentioned, was secured in the wound.

[For the first fortnight he did remarkably well: but at that time feverish symptoms set in, and shortly afterwards hiccough, purging, and collapse; and the patient died in rather less than a month after the operation. At the post-mortem examination it was found that]

The position and extent of the prostatic wound were quite as they should have been; only there had been little or no progress towards healing. The cavity of the bladder was contracted to a very small size, and presented such structural characters as are usually observed in cases of calculus which have not undergone operation; viz., villous thickening of the mucous lining, hypertrophy of all the coats, fasciculation, and sacculation. There was no trace of injury, or of untoward inflammatory action; no membranous exudation, no ulcer, no slough. And, in this changed state of the organ, it did not surprise us to find no distinct evidence of where the troublesome calculus had been lodged.

My chief object in narrating this case to the Society, is to direct attention to the fact, that the mode of extraction applied to the incarcerated stone, did not cause serious structural injury, if any, to the soft parts implicated; and that, therefore, a like procedure may be adopted in other cases of similar complexity, with a good prospect of success and safety. I do not, of course, mean that this mode of treatment is advisable in all cases of encysted calculus. There are cases in which the stone and sac are easily within reach of the finger, and where detachment and dislodgement can consequently be effected without the use of forceps—by the finger and scoop, most probably: aided, if need be, by the probe-pointed bistoury. There are also cases in which the stone is so firmly lodged, and the part projecting from the narrow neck of the sac is so very small, that amplification of the space, whereby the stone is expected to make its exit, must be made by some cutting instrument, if extraction be seriously comtemplated. The mode now spoken of, I conceive to be applicable to those cases in which the stone and cyst are beyond the reach of the finger, and in which the stone is not so tightly embraced by the cyst as to prevent detachment by means of a probe or finger—in which, in short, the use of cutting instruments, applied to the retaining cyst, is not essntial to the stone's liberation.

The case of Doull seems to show satisfactorily, that an incarcerated stone may be seized firmly, yet gently, along with its investing soft parts; that all may be brought down to the prostatic wound, within reach of the finger; that by the finger's point and nail, the soft parts may be detached and reflected, while the stone is not let go; that the stone, cleared, in whole or in greater part, may then be readily extracted; and that all this may be effected without inflicting untoward injury on the vesical coats. It is not unimportant to observe, however, that the forceps employed were Liston's; flat in the blades, and in their grasping surfaces covered with calico, instead of being armed there with projecting teeth. The calico, in such circumstances, at once affords a sure hold, and avoids the risk of vesical injury.

The case further marks an important fact, viz., that the presence of two or more excavated and smooth surfaces on a vesical calculus, does not necessarily prove the existence of more than one other stone; inasmuch as, if one stone be fixed and projecting, the other, loose, and then shifting, may, at different times, present different surfaces for attrition.

Monthly Journal, Feb. 1848, *p.* 574.

[After Professor Miller had read his case,]

Dr. Newbigging related the history of a case of encysted stone in the bladder, which had occurred, many years ago, in the practice of Sir William Newbigging. A man, thirty-eight years of age, underwent the operation of lithotomy. On seizing the stone wth the forceps, the resistance to its extraction was such as to induce the belief that the opening in the prostate was too small, and this was accordingly dilated as far as was deemed safe. The resistance, however, still continuing, the finger of the left hand was introduced along with the forceps, when it was ascertained that part of the stone was embedded in a sac, occasioned by the contraction of a portion of the bladder forming a ring around the calculus, which retained and prevented the stone being removed. While the forceps were made to maintain their hold, the ring, which had formed a deep fissure in the stone, was gradually, although somewhat forcibly, dilated by the finger; and, so soon as this was accomplished, the final extraction of the calculus was effected. Nothwithstanding the manipulation, and the large dimensions of the stone, the patient recovered in the usual time, without one unfavourable symptom. The calculus is in the collection of the Royal College of Surgeons of Edinburgh.

Monthly Journal, March 1848, *p.* 690.

103.—DRY CUPPING IN RETENTION OF URINE.

M. **Vandenbroeck**, principal physician at Mons, informs the Society of Medicine at Anvers, that for more than twenty years he has replaced the use of the catheter in both sexes by the application of large cupping glasses to the superior and internal part of the thigh. In nine cases out of every twelve, the emission of urine, says he, was made at the end of some seconds. He does not assert that this has any effect in mechanical retention of urine.

Dublin Medical Press, March 1, 1848, *p.* 137.

104.—ON THE TREATMENT OF SPERMATORRHŒA.—By M. Lallemand.

In the *treatment* of this affection, M. Lallemand observes, it is more important that our attention should be directed to the present condition of the spermatic organs, than to the original cause producing this; and there can be no question that, in many cases, until this great source of irritation be removed, all the efforts of the practitioner and resolutions of the patient will be in vain. To the chapter which directs the suitable treatment, when this diseased condition arises from irritation occurring in the vicinity, we need not advert; seeing the remedies employed against ascarides, eruptions or fissures at the margin of the anus, diseased conditions of the prepuce, stricture of the urethra, constipation, &c., are those in ordinary use.

Although it is a common but pernicious error to suppose that spermatorrhœa generally arises from an original debility or atonic condition of the genital organs, yet such cases are occasionally met with, "occurring especially in such as have suffered during infancy from an incontinence of urine, in those whose genital organs are not perfectly developed, or whose temperaments are markedly lymphatic."

In such subjects we find the pollutions increasing during mild and damp weather, and diminishing under the influence of bracing winds. Tonics are obviously here indicated: and M. Lallemand has derived much advantage from the transmission of galvanic shocks through the penis and perineum; while he has seen nothing but mischief result from the use of cantharides and phosphorus. He thinks well of the ergot of rye, given in doses of 4 to 20 grains night and morning. Cold bathing has been far too indiscriminately resorted to in spermatorrhœa. It is more especially useful in masturbation and venereal excess, but always proves injurious when, as is usual in the case of diurnal pollution, the great debility prevents the production of a sufficient reaction. Warm, aromatic baths are in such cases very useful; especially when incontinence of urine existed during childhood. Cold applied in a more local manner, as by lotions or the douche, and followed by active friction, is of good service. In well-marked cases, the ferruginous waters, due attention being paid to the condition of the digestive organs, are useful; and although all such medicinal substances as are given for the especial purpose of exciting the genital organs in impotence from debility, are generally injurious in their operation, yet, when there is an abnormal sensibility of the genito-urinary apparatus, the balsamic remedies as copaiba, turpentine, &c., given in small doses, sometimes prove of service in allaying it.

Occasionally, seminal discharges arise from the abnormal nervous susceptibility of the genital organs, the least touch or friction inducing peculiar sensations or emission. Great irritation may likewise prevail in the urethra, without local inflammation at the orifice, in the course of the cord, and about the neck of the bladder. These cases occur in irritable subjects, and are best met by narcotics and sedatives given cautiously however at first. In such instances, five or six-grain doses of camphor often diminish the irritative erections. The introduction every few days of a moderate-sized gumelastic catheter, which is to be allowed to remain in the urethra for an hour or more, although at first productive of increased suffering, eventually gives much relief by blunting the morbid sensibility of the canal. To produce the full effect of this means, however, more time is required than many patients are willing to devote to it, and in such cases acupuncture of the perineum may be advantageously substituted; this being a means of treatment which M. Lellemand considers has fallen unjustly into disuse. Pollutions maintained by the influence of acquired habit are advantageously treated by it and catheterism.

As we have already seen, the great bulk of cases of spermatorrhœa are connected with a state of irritation of the spermatic organs, varying in degree from simple excitement to actual inflammation. In the treatment of such, M. Lallemand thinks that we have injudiciously departed from the advice of Hippocrates, by substituting cold for tepid baths. His remarks, too, upon the advantages of a milk diet and light regimen, are excellent;—the stomach, however, owing to its usually irritable condition, requires a variety of modifications of diet. Wine, forbidden by Hippocrates, is usually abandoned voluntarily (as is generally beer also) by these patients, owing to their experience of its ill-effects in the aggravation of all their sufferings. They are unanimous in their statements upon this point. All exercise of the organs by coitus when possible, or by the excitement of erotic ideas, must be abandoned, until after convalescence has become firmly established. In the chronic inflammatory state of the orifices of the ducts and the adjacent portion of the urethra, which is the essential characteristic of the form of the disease we are now considering, and the relaxed condition of the parts consequent upon its prevalence, *cauterization* with the nitrate of silver is especially indicated; and to M. Lallemand are we indebted, if not for its first actual application to these cases, (Sir Everard Hume having previously so employed it,) at any rate for the far more important service of having perseveringly investigated its claims, and established its right to be considered as the means *par excellence* best calculated to dissipate lingering morbid action, and restore lost tone. He reasonably complains of the conduct of those who have chosen to adopt this part of his practice, without accompanying it with the precautions he deems requisite; and especially enforces the allowing a sufficient interval to elapse after the first application, before again having recourse to it—three or four weeks at least. In the majority of cases a single cauterization will suffice, and at most two; though in some few instances more may be required. We need not enter upon a description of the mode of performing the operation, or of the instrument employed by M. Lallemand (of which Mr. M'Dougal proposes a modification), these having been sufficiently made known in the writings of Mr. Curling, Mr. Phillips, and others.

M. Brâchet related to the Academy of Medicine last year (Bulletin, tom. x., p. 650) some cases of aggravated spermatorrhœa, which he cured by means of a bandage applied to the perineum for several weeks. We do not know that this success has been confirmed by other practitioners; but in certain cases,—as where the patient refuses to submit to cauterization, or the canal is in too irritable a state to admit of its performance, or the practitioner not confident in his dexterity,—the plan would certainly seem worthy of a further trial.

Convalescence, in all but simple and recent cases, is of a slow growth, relapse being, by the force of habit, of such easy occurrence. Hygienic precautions require to be rigidly enforced long after their apparent necessity has ceased. When the health has become sufficiently reestablished and natural desire rekindled, it is highly desirable that the sexual organs should be moderately exercised, both for the prevention of the reacquisition of depraved habits, and for the imparting additional vigor and tone to them. But advice of this kind must not be lightly given, inasmuch as we are not justified in prematurely recommending a matrimonial union for the mere chance of benefiting the patient.

Any such experimental proceeding of this kind would be a gross injustice *to the* wife, and might entail despair and disappointment upon the husband.

Renovated powers, on the other hand, are apt to be used incautiously; and indeed what would be abstemiousness in the robust becomes an excess in those whose genital organs have been disordered; and this may easily lead to the reproduction of the spermatorrhœa.

British and Foreign Medico-Chirurgical Review, Jan., 1848, p. 44.

SYPHILITIC AFFECTIONS.

105.—ON URETHRAL CHANCRE.—By M. Ricord.

[When secondary symptoms appear to follow blennorrhagia, this virulent blennorrhagia as it is called, is the result of a urethral chancre; this M. Ricord has proved by observation both on the living and the dead. He says:—]

A urethral chancre in the balanic region is very common; in many cases you need but hold the lips of the meatus slightly apart to see it very plainly. This fact no one denies. Now this chancre may extend backwards in such a way that its anterior margin may be perfectly apparent, whilst its posterior limit may be entirely hidden to the eye, and this often takes place in cases which, in other respects, do not admit of the slightest doubt. It is plain, then, that this posterior limit escapes our observation; but is this a reason for denying its existence? This chancrous ulceration must of course end somewhere or other behind the point which comes under the cognizance of your eye. But why should the chancre not just as well *begin* as *end* in parts which you cannot see? Is not this a fair deduction? All that part of the canal that you can open to view may be healthy, whilst the posterior division may be effected with chancres.

[M. Ricord uses the abortive treatment in these cases, and remarks upon this subject,]

My doctrine runs thus: a chancre destroyed by caustic within four days of improper intercourse may entirely disappear, without having time to contaminate the system; with this proviso, however, that the induration of the base have not commenced. Now, to return to the question at issue: I must say, at the very outset, that the gentleman who reported on this matter thinks that it is possible to destroy a primitive chancre before it has had time to taint the system. M. Velpeau is of the same opinion, but he considers these cases very rare. I confess, likewise, that they are very rare, but simply because we are seldom consulted in time. M Roux would like the disease to be left to itself. *Lancet, Jan. 1, 1848, p. 6.*

[In another lecture, M. Ricord explains more particularly his *abortive treatment of gonorrhœa.*]

The inflammation, during a few of the earlier days, affects principally the balanic region. This is the time for attacking it with caustics; and among those which are in general use, nitrate of silver is certainly the most efficient. The urethra may be touched with this salt, in the solid state, by means of M. Lallemand's *porte caustique;* but you will find that patients have a strong objection to this mode of cauterization; and it must be owned, besides, that it is not possible to cauterize uniformly in this manner. I would therefore strongly advise you to give the preference to injections. The latter are an excellent means of curing blenorrhagia—and indeed I do not know how a cure could be obtained without them. Yet how violently some people deprecate them. It has been alleged that injections produce strictures; but this is a mistake; far from doing so, I am bound to say that they often prevent them: they are to be looked upon as prophylactic measures against strictures, and not as giving rise to them. Is it not with injections that we control blennorrhagia at its very onset?—and what more likely to give rise to stricture than a prolonged blennorrhagic discharge? Is it not a well-known fact, that the chances of stricture always increase with the duration of blennorrhagia? Those who have accused injections of doing so much mischief must have referred to the time when Bell used them indiscriminately, in all cases, and without attending to the distinctions which are carefully studied in our days. When a surgeon in those times was applied to for the removal of a stricture, he invariably found, on inquiring into the history of the case, that injections had been used; and this led, of course, to the suspicion, that the latter had much to do with the production of strictures, and they were at last looked upon as the sole cause of them. In order to render abortive injections effective, you must use a glass syringe of easy action, with a solution of fifteen grains of the nitrate to one ounce of distilled water. The patient is first desired to pass water, and then made to sit on the edge of a chair, without troubling him with a compress on the perinæum, as it is sometimes practised; the penis is to be taken hold of, slightly stretched, and the pipe of the syringe gently introduced into the meatus, taking care to press the lips of the latter so as to bring them into close contact with the pipe. The injection is to be made suddenly, to take the mucous membrane by surprise, as it were; for it sometimes happens that the urethra contracts, and opposes the progress of the liquid. Half the contents of a small syringe are sufficient to moisten the whole canal. You must not neglect apprizing your patient of the peculiar sensations he will experience after this, so that he may not look upon symptoms which are but transient consequences of the abortive treatment as signs that the disease is growing worse.

These sensations are the following: very intense pain coming on soon after the operation, and an increase of the discharge; the mucous membrane begins to secrete a serous, sero-sanguineous, or sanguineous fluid, and this is soon followed by a phlegmonous suppuration, of a creamy consistence, which forms a plug in the urethra. The first micturition after the injection gives excessive pain, and the distress is greatest in the balanic region. The stream of urine may assume all the different forms which strictures generally produce. The pain, may, however, be mitigated, if the patient plunge the penis in cold water while micturating, and refrain from any effort. All this may take place within twenty-four hours, and these unpleasant symptoms will generally vanish before the expiration of that time. Those which usually persist a little longer are the sanguineous discharge, and the creamy suppuration which appears on the meatus. Care should be taken not to resort to new injections until those have entirely disappeared. The disease, with some patients, is suddenly arrested after the urethra has secreted a few drops of very thick, muco-purulent matter; with others, the cure is preceded by the discharge of a stringy mucus, which gradually diminishes in quantity, and soon entirely disappears. But when greenish, muco-purulent matter makes its appearance, just as it did before the injection was used, it is a sign that the blennorrhagia is persisting, and that we have failed in cutting it short.

The peculiar characters of the disease generally re-appear towards the third day after the application of the abortive means, when the latter have proved powerless in controlling it. We may therefore say, taking the mean of time which elapses in different cases, that the abortive injection is to be renewed at the expiration of two days. If, however, the first injection were to produce none of the symptoms which I have just enumerated, it should be repeated on the same day. It may now be asked,—Whether the abortive treatment I have described is not liable to give rise to very unpleasant consequences? I may answer thereto, that this, like many other treatments, has its advantages and its drawbacks. It cannot be denied that it may produce lypothymia or pain in the glans, faintness, alarming hæmorrhage, a retention of urine, consequent upon the swelling of the mucous membrane; but all these will yield to ordinary means, and do not constitute a sufficient reason for giving up this peculiar mode of treatment, which has undoubtedly rendered very great services to humanity.

To secure all the benefit which the abortive treatment holds out, we should not confine ourselves to injections; they will very often succeed without the assistance of any other agent; but as they sometimes fail when used alone, we should be careful to combine them with the internal use of copaiba and cubebs. These substances and the injections should therefore be made to act simultaneously, and it is indispensible to give them in large doses. The injections modify, and create a new action in the mucous membrane, and copaiba and cubebs, by yielding their principles to the urine, contribute powerfully in rendering that modification more effective.

Lancet, Dec. 11, 1847, *p.* 617.

106.—ON THE CONSTITUTIONAL SYPHILIS OF INFANTS.—By MM. Trousseau and Lasegue.

The authors consider it established that syphilis may be transmitted either in its primary or secondary form directly from the mother to the infant; but they hold that there is no proof of the transmission of tertiary lesions, except as a consequence of the primary or secondary forms.

They are disposed to deny the appearance of syphilis in the infant at birth, or at any period before the second week. They suppose the alleged cases of its earlier appearance to have been founded on misconceptions, either of accidental ulcerations or mucous discharges, which prove nothing with regard to the constitutional affection, or of a general cachectic aspect, which has been described with great confidence, but which MM. Trousseau and Lasegue consider as being too vague in its characters, and too uncertain in its occurrence, to form the basis of a diagnosis. One of the earliest and most characteristic signs of the appearance of syphilis in the infant is a coryza, which begins at first with mucous secretion, followed by serous and purulent discharges, and by hemorrhage of greater or less frequency, and terminating in caries and deformity of the nasal bones. This affection they believe to be peculiar to syphilitic infants.

Almost equally characteristic is a particular discolouration of the skin, which becomes tarnished and loses its transparency, without, however, any preternatural turgescence or shrinking. The colour is unequally diffused over the face and trunk; the greater its diffusion. the less, generally speaking, is its intensity. This tarnished hue of the skin rarely lasts more than a week. Next in importance and succession are the eruptions. On this point the authors remark, that it is impossible to found a valid diagnosis upon an eruption taken apart from all other symptoms; but that the concurrence of an eruption with other and less variable signs, is sufficient to place the conclusion upon a firmer basis. The different characters supposed to indicate a syphilitic eruption are then discussed, and it is shown that neither the copper-coloured stains, nor the dark hue of the crusts, nor the circular disposition of the eruption, can at all be relied on in the diagnosis of infantile syphilis.

The above are the earliest and most characteristic symptoms; in the subsequent progress of the disease the infant becomes cachectic; accidental wounds assume an unhealthy aspect, and heal with difficulty; the umbilical cicatrix is apt to remain open, and to fungate. Sometimes, though by no means constantly, there is gradual emaciation; the violence of the internal disorder bearing no proportion to the intensity of the external signs. The infant does not take the breast readily; sleep is short and interrupted; it cries frequently, and without appreciable motive; and, concurrently with these symptoms, diarrhœa is established, which it is exceedingly difficult to subdue. The mouth and anus, where the mucous membrane joins the skin, are cracked, and fissured, and the discharges by stool are often bloody. Under these circumstances the infant, impoverished and weakened in constitution, falls a victim either to the chronic disorder, to the reigning epidemic, or some accidental acute disease. The fatal sinking is in general extremely rapid, and not preceded by the usual warning circumstances, and the inspection of the body does not explain the rapidity of the fatal termination. The most constant lesion is serous effusion into all the cavities.—*Archives Generales de Medicine*.—October, 1847.

Monthly Journal, Dec. 1847, *p.* 436.

107.—ON THE TREATMENT OF SYPHILIS IN AUSTRIA.—By M. SISOVICS, chief Surgeon to the General Hospital of Vienna.

[M. SISOVICS is a non-mercurialist, and it will be seen that his mode of treatment resembles, in some respects, that followed by many English practitioners.]

To commence with the treatment of blennorrhagia. The plan of endeavoring to cut short an attack of this malady, as soon as its first symptoms make their appearance, by injections into the urethra of nitrate of silver, of acetate of lead, &c., is looked upon as uncertain and reprehensible—in the latter point of view, as exciting violent inflammation of the urethral lining membrane of the epididymis and prostate, whence result buboes and retention of urine, and as a fresh and fertile source of consecutive diseases. M. Sisovics would rather employ emulsions, local and general baths, and other antiphlogistic measures, with which, and the due observance of hygienic rules, he has had much more success. After the disappearance of inflammatory symptoms he would have recourse to the balsam of copaiba, with an equal quantity of nitric acid, in doses of twenty drops in water, gradually augmented; or he would mix the balsam with carbonate of magnesia, making it into pills, or with gum, in the form of emulsion. In five or six weeks, under this treatment, recovery takes place, without fear of relapse. When this period has elapsed, blennorrhagia no longer exists, but another malady, depending upon a metamorphosis of the texture and secretion of the urethra, of its membranous part and bulb, of the prostate, of the neck of the bladder, or of the bladder itself, so that the discharge present is but a symptom of the latter. Cubebs are not approved of, since they will often cause heat of the rectum and bladder, with tenesmus, &c.

In syphilis, he would encourage the progress of a chancre, that the diagnosis may be rendered more certain; and hence he uses local emollients and baths. When the syphilitic nature of the ulcer is decided, he gives drinks of substances calculated to produce diaphoresis; as decoction of sarsaparilla, of guiacum, &c.; and then proceeds to give the preparations of iodine, internally and externally, also by way of local baths and fomentatations. He does not deny the influence mercury may have; but yet refers to the many evils its administration brings about, and puts it in opposition to the salts of iodine, and their undoubted advantages. But he disapproves of the protiodide and biniodide of mercury, and especially the latter, as producing serious effects on the stomach and other organs. He administers the iodide of potassium before the noon-day meal, that there may be no fulness of the stomach. He has observed good effects to follow the use of iodine baths, and the more when two or three pounds of common salt have been added to them. The preparation of iodine he also employs against the sequelæ of syphilis; such as swelling of bones, ozæna, condylomata, &c. With this plan of treatment a certain regimen must be followed. M. Sisovics has noticed that starchy substances retard, whilst meat and non-farinaceous vegetables favor the cure. He clothes his patients warmly, keeps them to their room, allowing only a brief departure from it during the middle of the day.

The iodine treatment of syphilis M. Sisovics has pursued for six years, in 800 patients, and has met with very great success. He remarks that syphilis, as well as scrofula, &c., when arrived at a certain point in intensity or duration, may not yield to iodine. In scrofula, particularly where there is caries of the bones, M. Sisovics uses a compound of iodine of potassium with cod-liver oil. Lastly, this gentleman believes that no characteristic and infallible sign of chancre is known; but that the slow course observed in all the changes of a chancre may be considered as the essential sign of a syphilitic ulcer. *Lancet, March* 11, 1848, *p.* 288.

108.—ON THE HEREDITARY TRANSMISSION OF SYPHILIS.—By M. Ricord.

As long as an infected father is under the influence of constitutional syphilis, the germ which is by him conveyed into the uterus carries along with it the syphilitic diathesis; and it must be noticed, that evident manifestations upon the father are not absolutely necessary—the diathesis is quite sufficient to produce upon the offspring the effect I have mentioned. When the secondary period is passed, and the tertiary manifestations begin to appear, the disease is no longer transmissible; the children are then born with another disposition—viz., the scrofulous; and the tertiary symptoms of the mother have the same influence on the child as those of the father. Remember, before we proceed any farther, that there is no such thing as an infection of the child by the mother, she having been contaminated by the father; but that, as I said before, the husband procreates an infected child, which may then propagate the secondary poison to the mother; for where there are no children the mother does not suffer. But suppose the mother to conceive whilst herself and the father are quite free from the syphilitic diathesis, and that this diathesis subsequently happens to arise with the father, can it be transmitted to the child?

I do not hesitate in answering this question in the negative, and I must look upon that opinion as very absurd, which supposes that the father can contaminate the fœtus through the membranes. In order that a child, the offspring of healthy parents, should be at all infected, after it has existed more or less time in utero, the mother must, by direct inoculation, become affected with an indurated chancre, and all its consequences; then the fœtus may inherit the diathesis of the mother. The latter might perhaps transmit the diathesis to a first fœtus by means of a second germ, (the first being quite healthy,) in a case of super-fœtation; but even under these circumstances it would be still by the instrumentality of the mother that this first fœtus would become contaminated. It is therefore evident that the mother, in order to infect her child, must have upon herself a secondary syphilitic affection, either acquired whilst the fœtus is in utero, or before that event. But we unfortunately do not know what is the latest period of pregnancy in which a woman, who happens to take the disease, can contaminate her offspring; in other words, we do not know whether a diathesis contracted during the eighth or ninth month of conception may still be transmitted to the fœtus. The child may, moreover, be infected by direct contagion on its passage through the vagina, if the mother has, in that region, or in any part of the track along which the fœtus has to be expelled, primary inoculable sores; or if it were received at its birth by a person, in the same state as the mother; but this kind of infection is not inevitable.
Lancet, April 8, 1848, *p.* 383.

109.—OPERATION FOR PHIMOSIS.—By M. Ricord.

His method is as follows:—The penis is allowed to remain in its natural position, and no traction is used: a circular mark is made with ink upon the prepuce, about two lines anterior to the base of the glans, and parallel to the corona: a long and strong needle, its point covered with a wax head, is then introduced between the glans and prepuce, and made to pierce the whole thickness of the latter, on the mesial line, and a little in front of the circular mark. The mucous membrane and skin of the prepuce are thus fixed, and the needle is allowed to remain. Behind it, and in a longitudinal direction, a fenestrated forceps, with notched edges, is then firmly applied. The fenestræ of the instrument correspond to the circular mark and the glans; at this stage of the operation the latter is to be pushed backwards. The next step is to pass sutures, five or six in number, through the fenestræ; and when all the threads are applied, the prepuce is shaved off with a bistoury made to glide between the needle and forceps. The latter is then withdrawn carefully, so as not to disturb the ligatures. The assistant should be desired to press the forceps very tightly when the prepuce is being shaved off; if this be neglected, the prepuce will yield, and the sutures will be cut. When the forceps is removed, the arteries which are noticed to bleed, should be tied or subjected to torsion; the threads which pass above and below the glans are then divided in their centre, and the respective ends of each half resulting from this section are tied, to bring the mucous membrane in contact with the skin. Of course there will be twice as many sutures as there were threads passed.

Treatment.—We should, after this operation, enforce rest, low diet, aspersions of cold water, and camphorated pills; union by first intention rarely takes place completely. The submucous cellular tissue will generally be found infiltrated with serosity on the next day, but it is gradually re-absorbed. The sutures ought to be removed on the fourth day; they might, if left longer, lacerate the tissues. The parts are usually healed up by the tenth or fifteenth day, excepting in those cases where the union by first intention takes place as early as the fourth or fifth.—*Lancet, Nov. 27, 1847. Prov. Med. and Surg. Jour., Jan. 12, 1848, p. 27.*

AFFECTIONS OF THE SKIN.

110.—ON CALLOUS ULCERS OF THE LEG.—By Professor Syme, F.R.S.E., &c.

[In Mr. Syme's work, "Contributions to the Pathology and Practice of Surgery," is the following method of treating these tiresome cases. He says:]

In 1829, I proposed a plan of treatment (for the relief of callous ulcers) which has now stood the test of sixteen years' trial in most parts of the world, and may, I think, be regarded in every point of view as preferable to the other (the treatment by strapping and bandaging). This was to apply a large blister over the sore and neighbouring swelled part of the limb, which has the effect of speedily dispersing the sub-cutaneous induration and thickening, so as to relax the integuments, and thus remove the obstacle opposed to healing action. In the course of a short time, seldom exceeding a few days after the blister has been applied, the surface of the ulcer, however deep it may have been, is found to be on a level with that of the surrounding skin; not, of course, through any process of reproduction or filling up, but merely from the removal of interstitial effusion, allowing the integuments to descend from the position to which they had been elevated, as may be readily ascertained by measuring the circumference of the limb, before and after it has undergone the effect of blistering. But, along with this change of form, the ulcer in other respects no less speedily acquires the characters of a healing sore, assuming a florid colour, affording a moderate discharge of purulent matter, and presenting a granulating surface with surrounding margin of cicatrising pellicle. No subsequent treatment beyond the attention requisite for insuring quiet and cleanliness is needed, and recovery is completed, not only more quickly, but with much less tendency to relapse, than when accomplished by other means.

With regard to the varicose ulcer, the author states that his opinion is not in favor of aiming at what is called the "radical cure," by obstruction of the vein or veins concerned. He has frequently practised the method of Velpeau, who accomplishes the object of obliteration by passing a pin through the skin under the vessel, and then tying a thread lightly round the included part; and has never met with any bad consequences from doing so: but he is nearly satisfied, from what has fallen within his own observation, that the operation is barren of good effects in permanently remedying the tendency to ulceration. The *black wash* has long seemed to him the best application for promoting cicatrisation of the ulcer. If the sore comes under treatment in an inflamed or irritated state, poultices should be employed in the first instance; and if the depressed surface and thick edges denote a complication of the callous condition, blistering will be proper instead of such relaxing means. *Med. Gaz., Feb.* 25, 1848, *p.* 335.

111.—ON THE TREATMENT OF BURNS.

[Numerous papers on this subject have lately appeared in the Medical Journals, more especially in the "Provincial." We expect an interesting report from Mr. Crompton, of Manchester, on the subject, at the next meeting of the Provincial Association. Meantime we give the views of a few gentlemen who have written on the subject, and first, those of Professor COOPER:—]

Burns may be classed in six varieties:—In the first there is just a redness of skin where the degree of heat which has been applied has not been intense, and there is little or no sloughing, and some erythema; and in a very few hours, or, at most, in a day or two, the effects will subside, and the cuticle peel off, leaving no remains of injury in the part. It is very true that even this degree of heat may produce great injury, and even danger, where it is very extensive, as it suspends the functions of the skin, very much to the loss of the whole system; the pulse is quickened, the tongue red, and the mucous membrane of the alimentary canal is excited. In the second variety the degree of heat has been greater, the redness is darker, and sloughing more considerable, but what marks it more particularly is the formation of vesicles, which sometimes rise immediately after the application of heat, and in other instances, within twenty-four hours afterwards, contain serous fluid. In the third class, the surface of the cutis suffers, and is more or less destroyed: the vesicles attending this injury contain turbid blood and serous fluid; you may know it by the appearance of the part, it having a yellowish or light brownish discoloration. These parts are converted into eschars, from which the patient suffers no pain, unless pressure be applied, which produces suffering by affecting the living parts between the eschar. In the fourth class, the whole surface of the cutis is destroyed, and more or less of the subcutaneous texture is injured; the discoloration of the eschars is also of a deeper color. You may observe that these eschars are stiffer than those in the preceding classes and also more brittle, and the skin around them is puckered and wrinkled. Upon the separation of these eschars you find ulcers, from which granulations are formed and they spread in great luxuriance; there is also profuse discharge of pus. In the fifth class of burns the textures more deeply situated are involved, as the fascia and muscles; sometimes nerves and vessels, not destroyed, are included. The eschars are thicker, cold, black, and brittle; they are longer in separating, but when they do separate, there is a very rapid discharge of pus, and quick granulations. In consequence of the muscles being involved, their action is impeded, and it often happens that the whole functions of a limb are suspended by a burn of this kind. In the sixth class the limb itself is turned into a black, insensible mass, as sometimes occurs in large iron foundries, where the hot metal comes in contact with the lower extremities; the foot, for instance, is placed in the groove or cutter where the hot metal runs, and is at once converted into an eschar, when, indeed, it is not at once annihilated. I need not tell you that in the former case you must amputate the member.

The constitutional symptoms of burns may vary much; I may tell you they are divisible into two classes; those arising from the shock and irritation of the system produced by the action of heat; and those which come with the reaction that takes place, such consequence implying hectic disturbance and its usual concomitant circumstances.

A burn may be only superficial, and yet, from the extent of its surface, highly dangerous, and perhaps fatal, from the shock experienced by the system. It may produce such depression of the circulation that you can scarcely feel the beating of the arteries of the wrist, and the whole body may be in a state of utter prostration. Now, all the danger arising from the first and second variety of burns is in the first stage, a fact which you will take notice of, as it does not apply indiscriminately to the rest; and, if the patient get over the first stage, there is small danger to be apprehended from the rest; resolution will take place, and within twenty-four hours the danger will have passed away. Not so with burns of the third, fourth, and fifth degree: involving the deeper textures, they are not at once attended with all that constitutional danger attending burns of the first and second degree; but in three or four days, when the process commences by which the eschars are separated from the living parts, a great degree of constitutional disturbance takes place. This process may take three or four weeks for its accomplishment, but it commences within three or four days of the injury; and that period is always one of great danger in burns of this degree. Dupuytren called this dangerous disturbance, the irritation from the injury, or, as we should say, the shock.

The second period of danger is during the inflammatory stage. The third period of danger is when suppuration is going on, and the great discharge tends to produce hectic. *Medical Times, Dec.* 4, 1847, *p.* 129.

[The following is an abstract of the treatment which Professor Cooper recommends :—Burns of the first degree, except when occurring on the head and face, or extensively on the trunk, may be treated by cold applications, or flour, or carded cotton may be applied, and suffered to remain until cleanliness, or the patient's sensations, dictates their removal. Burns of the second degree may be treated with the same applications: and if the vesicles are large, the fluid may be let out by a puncture with a very fine-pointed instrument. When burns are of the third and fourth degree, they should be treated with the lime-water and oil liniment, turpentine liniment, or poultices, until healthy pus begins to be secreted, and granulations form, when a mild astringent ointment, as the calamine cerate, should be used. When there are high fungous granulations, nitrate of silver should be applied, or a powder of myrrh and calamine sprinkled on the part, or straps of adhesive plaster applied. The great point in the local treatment of burns is, to prevent the access of air to them, by keeping the parts well covered, and removing the dressings as seldom as possible. When the dressings of a large burn are to be removed, only one part of the surface should be exposed at a time. As to constitutional treatment, it consists, in the period of shock, in the administration of opium and stimulants, with external warmth; and, for children, the warm bath. When reaction takes place, it must be moderated, if requisite, by antiphlogistic treatment: opium being still however useful. Again, in the period of profuse suppuration, bark, with acids, opium and wine, together with mild purgatives, are to be employed.]

Medical Times, Dec. 11, 1847, *p.* 149.

[Mr. Erichsen, remarking on the analogy which exists between the morbid appearances after burns and those from eruptive fevers, says that]

Both after burns and the eruptive febrile diseases, "nothing is more common than to find the mucous membrane of the stomach and bowels congested or inflamed, the follicles being enlarged and prominent; together with evidences of meningitis, whether consisting in the deposition of lymph, or the effusion of serum, with more or less congestion of the cerebral substance. Inflammation of the bronchial membrane is also of very frequent occurrence, and inflammatory congestion of the tissue of the lungs in its different stages, is by no means rarely met with. Thus, then, the lesions that occur, as a consequence of the eruptive febrile diseases, are very similar, in many respects, to those that are found in fatal cases of burns.

When we consider that the average quantity of the cutaneous secretion amounts in a healthy adult to eleven grains in the minute, or between two and three pounds in the twenty-four hours, (Seguin) we cannot suppose that this secretion should be suddenly arrested to the extent of one-half, or even more, as it necessarily must be, when a corresponding portion of the skin is injured by the action of caloric, without its being absolutely necessary that one of two things should happen; either that an antagonistic secretion, to a corresponding amount, be set up from some other tissue or organ, or else that a degree of plethoric distension of the whole vascular system, giving rise to congestions of internal organs and membranes, and effusions into serous cavities, take place. Now, the first does not occur in most cases of burns to a sufficient extent, but the system becomes hyperæmic. Congestions ensue in the mucous membranes, partly from the condition that is common to all the tissues, and partly from the increased afflux of blood that is always attendant upon increased functional activity of a part. The brain and lungs, as well as other large organs, occasionally become engorged, effusion of a more or less bloody fluid takes place into the different serous sacs, the arachnoid amongst the rest, and death ensues from causes that are themselves the immediate effects of suppression of the natural secretion of the skin. By this means we may account for the occurrence of death in the earlier period of burns, before there has been time for inflammation to be lighted up, and also for the fatality of those injuries of this nature, that are extensive but superficial—burns of the first and second degree—in which cases the functions of the skin injured are entirely and suddenly arrested.

The practical bearing of the facts that have been mentioned in the first part of this paper, on the constitutional treatment of burns, is sufficiently obvious. If, as has been stated, the immediate cause of the occurrence of internal congestions and consecutive inflammations be the suppression of the cutaneous transpiration to a greater or less extent, and consequent retention in the system of a large quantity of fluid that ought to pass off by the skin, we should, in order to prevent the supervention of these secondary diseases, endeavour to set up such a drain on the system as would, as rapidly as possible, compensate for the arrest of the secretions of that tissue, and have a tendency to restore the balance of the circulation, disturbed by the accumulation of an unusual quantity of fluid in the system. This may either be effected by the employment of diuretics, so as to induce an increased action of the kidneys, by guarded bloodletting, carried to such a length as the powers of the patient would allow, or else, (what would be better, if time and the nature of the case would admit of it,) by encouraging the process of suppuration as quickly as possible.

It is a question whether diuretics or bloodletting might not be of advantage in preventing internal congestions in extensive *superficial* burns, in which the suppurative process would, probably, not be established; the injury not being sufficiently deep for that purpose. On the other hand, when the burn extends to a greater depth, if there be no immediate occasion for the loss of blood, from the actual occurrence of visceral mischief, the process of suppuration should be hastened and maintained, consistently with the powers of the patient, as a useful drain, and as perhaps the best mode of relieving the system from the pressure of the fluid retained within.

Mr. Erichsen concludes with the following words:—"On taking, then, a general review of the constitutional treatment of burns, it may be stated that the first object should be to relieve the system of the abnormal quantity of fluid that must have accumulated in it, in consequence of the arrest, to a greater or less extent, of so important a secretion as the perspiration. This may be accomplished either by the administration of diuretics, by guarded bloodletting, or by encouraging the process of suppuration, if it be deemed prudent to wait till this be established. Secondly, that any appearance, however slight, of the supervention of inflammation in the organs contained within the head, chest, or abdomen, should be watched with the utmost anxiety, and treated, if it do occur, as the circumstances of the case will admit. And, thirdly, that the process of suppuration should be maintained or arrested with a due regard to the state of internal organs, and the condition of the powers of the system."

Prov. Med. and Sur. Jour., Feb. 9, 1848, *p.* 75.

[Mr. T. M. Greenhow, senior surgeon to the Newcastle Infirmary, observes,]

When slight and superficial, any plan will prove successful. When very extensive and deep, none will succeed in saving life, though suffering may be alleviated; and it is in intermediate cases chiefly that discrimination is required in the choice of remedies.

1. The application of oil of turpentine has, according to my experience and observation, afforded the greatest relief from suffering, and been most successful in establishing a new and healthy action in parts extensively and deeply injured, by the application of excessive heat. The best form of application is (turpentine) thickened with ung. resinæ; and I have found in extensive burns, that lawn or silver paper, dipped in this when warm, has been a very convenient and successful method of employing it. The paper adapts itself well to the injured parts, and may be replaced, or deficiencies repaired, as often as may be required. When suppuration has been established, an ointment with creta has been found by myself the most soothing and successful successor to the turpentine dressing; and, at a more advanced stage, when the healing process is apt to become nearly stationary, it often receives a useful stimulus from a lotion of camphor mixture, one pound, tincture of opium and solution of lead, each, one drachm. The part must be covered with lint dipped in the lotion, and protected with oil silk and a bandage.

2. Cold applications do well in slight burns, and I have found them especially useful in burns of the face, accompanied with extensive injuries of other parts. In some cases of this sort from the explosion of gunpowder, I have employed lint dipped in cold water successfully, the other injured parts being dressed with turpentine, as before described. A severe example of this kind is at present convalescent in the infirmary of this place. The nature of the part, and necessarily exposed condition of the face, render the cold water dressing extremely convenient, and of easy application.

3. In slight burns without vesication, cotton or flour answers well. I may add that, when the injury is so general and severe as to forbid all hope of recovery, to envelope the entire person in cotton, is, perhaps, the most comfortable plan that can be pursued.

4. When the nervous system has received a great shock, internal stimulants are necessary, and opiates are often of great service. Subsequently the diet ought to be liberal, and quinine is useful as a tonic.

5. On the chest and abdomen burns of equal extent are attended with more hazard than on the extremities.

6. Contracted cicatrices are best prevented by the *non-application* of escharotics. The exuberant granulations attendant on burns, are the process employed by nature to insure an adequate extension of new skin. If this process is uninterrupted, the cicatrix becomes smooth and even, and the subsequent contraction is always increased in proportion to the destruction by caustics, of the healthy, though at first sight, perhaps, apparently too bountiful, granulations.

7. Of *post-mortem* appearances in cases of burns, I have no adequate experience.

8. When the injury is extensive and deep, especially when occupying a large portion of the trunk, and in very young subjects, the prognosis is always unfavorable, though the issue is not necessarily fatal. Extensive burns of this description are not unfrequently succeeded by phthisis, even when the patient appears convalescent, as regards the immediate effects of the injury.

9. Cicatrices are best treated by separation from the subjacent textures by a broad incision and subsequent careful dressing, with the use of mechanical means for preserving or restoring the natural relation of parts which have been preternaturally approximated.

10. The best preliminary treatment of burns is to bathe assiduously the injured parts with oil of turpentine.

Prov. Med. and Surg. Jour., Feb. 23, 1848, p. 101.

[Mr. Dorning, of Swinton, after stating that the Lin. Terebinth of the London Pharmacopœia, spread upon tow, was the ordinary application to burns when he was a pupil at the Manchester Infirmary, says:—]

It is now upwards of twelve years since I commenced practice, and during that period I have again and again been called upon to attend colliers burnt by explosions in the coal mines, which in this neighbourhood are of very frequent occurrence, and during the whole of this time I have employed flour as a dressing, except in one case, when it occurred to me that I would apply flour to one arm, and cotton to the other (both equally severely burnt), in order that I might judge which was the best. The arm to which the flour was applied healed somewhat more rapidly than the other, and with less pain to the patient, thus confirming my impression of the great value of flour as a dressing in burns. I now use it in *all* cases, be they extensive or the contrary. In the slighter cases, I think its effects are more satisfactory even than in the severe. When the burn is upon the back, I keep the flour in apposition by means of cotton, which I procure in long flakes, "carded," and apply from the shoulders to the waist, and then crossways round the waist, so as to effectually retain the flour upon the burnt surface. The flour must be of the *best quality*, and applied freely. In December, 1843, I attended two of the Earl of Ellesmere's colliers, at Worsley, which were dressed with an inferior kind of flour furnished by the patients; they were proceeding less satisfactorily than I could have wished; I therefore procured some *fine flour* in my own neighbourhood, and was surprised at the improvement the change had effected in a few days. I apply the flour with a "dredger," and allow it to "cake," simply directing the attendant to remove any discharge with a piece of soft old linen, or cotton wool, and not to disturb the "cake," but allow it to become detached of itself, when it must be removed, and the raw surface again covered with flour; and this process must be repeated until the "cake," on detachment, leaves a healthy surface, which it generally effects in fourteen or sixteen days. The pain produced by flour is, in my opinion, considerably less than is produced by any other mode of dressing, and most certainly not a *tenth* part so severe as the dressing with linimentum terebinthinæ, above alluded to, occasions. There is also considerably less risk of contractions following the cicatrization of burns cured by flour, than those cured by other means. I may state that next to flour, I consider cotton the best application in burns.

The ulceration remaining after severe burns I heal with ceratum calaminæ, unless it is in the vicinity of the hands or face, when I continue the use of flour.

[Mr. Higginbottom, of Nottingham, states that for the last twenty years he has used nitrate of silver as an application to burns, particularly those first and second class, and thinks it the best application; *first*, because it alleviates the pain; *secondly*, because it forms an effectual covering from the air.

The nitrate of silver has the peculiar property of preventing subsequent inflammation, vesication, ulceration, and sloughing, therefore the burn or scald is limited in its extent, diminished in severity, and consequently less dangerous, for the danger is generally in proportion to the extent of surface destroyed. After the application of the nitrate of silver, the parts should be exposed to the air if practicable, to form an adherent eschar; this will be found invaluable in burns and scalds of the face, neck, breast, and abdomen, the latter being protected by a fracture-cradle when in bed, which will defend the parts and facilitate the formation of an adherent eschar. If, from accident or any other cause, the eschar should be removed, a repeated application of the nitrate of silver will be necessary.

Where the parts cannot be exposed to the air to form an adherent eschar, as on the back, &c., the nitrate of silver must be applied, and afterwards covered with plasters of the neutral ointment,—the unguentum plumbi compositum (London Pharmacopœia) spread on linen, and then secured tightly by a linen bandage. The dressing must not be removed before the fourth day; at the same time allowing any adherent dressing or eschars to remain until they separate; after the separation, should there be any sore or inflammation, a slight application of the nitrate of silver, or black lint, may be applied, with or without the neutral ointment. The dressing may be repeated every third or fourth day, as required. I prefer the application of the *concentrated* solution of the nitrate of silver in burns and scalds, applied in the same way as I have recommended in the cure of erysipelas. (See *Provincial Journal*, 1847, p. 458, 532.) The surface should be made as clean and as *dry* as possible; any vesications or loose cuticle must be removed. A convenient instrument for the application of the solution is a small piece of sponge secured on the eye of a common silver probe.

Provincial Medical and Surgical Journal, Feb. 23, 1848, *p.* 101.

[Dr. H. BARKER, of Bedford, says:—]

As dresser and House Surgeon under Liston, whose premature death the profession now so keenly laments, I had ample opportunities of observing the good effects of the external application of flour; and so convinced was this distinguished surgeon of the superiority of that over all other applications, that he proscribed everything besides. His mode of applying it was by means of the common dredger, taking care to cover every part of the affected surface. He enjoined the repeated appliction of the flour to those parts where the discharge of serum oozed through the first applied portions of the powder. He was also careful not to disturb the application until it had completely caked together, and had become loosened by the discharges underneath.

This is the plan of treatment which I have since invariably followed. The application of the flour is very soothing, and in a few cases in which other modes of treatment had been previously resorted to, the application of the flour has speedily been followed by the most marked relief of pain, and diminution of the consequent constitutional irritation. Flour of the finest and best quality should be used; it should be lightly and freely applied, and the complete exclusion of the air should be secured by repeatedly dredging the parts where the escape of serum takes place; perfect quiet should be enjoined, and the application should be allowed to remain until thoroughly undermined by the discharges. Several days, in some cases, will be required to effect this, when the masses of caked flour may be readily removed. I have then had recourse to water-dressing, by means of lint and oiled silk. Cicatrization, if tardy, has been promoted by the substitution of a weak solution of sulphate of zinc for plain water, and exuberant granulations have been effectually repressed by lightly rubbing over the surface a smooth piece of sulphate of copper. The most important indication in these cases is the alleviation of pain and constitutional irritation, by the thorough shutting out of the air; and no application appears to me so effectually to accomplish this as the application of fine flour. It would seem to act less as a foreign body, and better to supply the place of the cuticle, than any other application with which I am acquainted. Indeed, such good reasons have I had to be satisfied with this mode of local treatment, that, unless the weight of evidence which you may collect should greatly preponderate in favour of some other application, I shall not be induced to try any other.

With regard to the constitutional treatment, I have little to say more than that, in my hands, the *muriate of morphia* has been found to be the most eligible form of anodyne. It is followed by less inconvenience than any of the crude opiates.

In conclusion, the application of flour to burns and scalds is probably that which could be more promptly and readily adopted by the public than any other. I would suggest, if the medical attendant be not within immediate call, that the patient be placed on a firm bed or mattress, with the head somewhat elevated, and the injured parts of the surface uppermost; if the limbs be involved in the injury, that they be placed in a straight position; fine flour should then be perseveringly sprinkled over the affected parts by means of a dredger, so as thoroughly to cover the surface. Should the injury be severe, and the distance from the surgeon so great as to render it impracticable for the case to be seen early, strong beef-tea may be freely administered, but in no case should stimulants be given, unless under medical direction. These are all the instructions on the subject which I consider as necessary for the public, and it is my decided opinion that the immediate application of flour in the manner directed, would be followed by much less suffering than of any of the thousand and one popular remedies which we are accustomed to meet with.

[Mr. Newnham, of Farnham, thinks the dressing by cotton more useful than by flour, "because it more effectually covers and protects the exposed nerves." When the sensitive nerves of the skin are exposed to any great extent, he thinks a fatal result inevitable.

Dr. Glass Black, of Torqnay, remarks that the great point in the treatment of burns with cotton wool, is *never to remove* that which covers the surface of the sore: he says "the outer portions which are saturated with the discharge may be cut off, and clean applied, but that covering the wound never."] *Prov. Med. and Surg. Journal*, Feb. 9, 1848, *p.* 76.

112.—ON PHAGEDENIC ULCERS.—By Samuel Cooper, Esq., F.R.S., &c.

[Phagedenic ulcers may occur in other cases than syphilitic ones. The disease is very rapid in its progress and is attended with severe pain preventing sleep, headache, fever, furred tongue, and tenderness of epigastrium.]

"In the local treatment," Professor Cooper says, "bleeding can rarely be resorted to with advantage; venesection exposes the patient to the risks of hemorrhage, on account of the natural tendency of this disease; and leech-bites assume a morbid action, as is just what we see in hospital gangrene. Mr. Welbank found an application of strong nitric acid to the surface an excellent means of arresting the ravages of gangrenous phagedena. His mode of applying it was, after protecting the surrounding skin with a thick coating of cerate, to dip lint in the acid and apply it to the part, the surface of which was thus converted into a firm and dry mass. Simple dressings were afterwards employed, and an evaporating lotion. In France a solution of chloride of sodium, consisting of one part of the concentrated solution in eight of water, is employed, either mixed in a poultice or used with lint. The dressings most used are bread or carrot poultices, a watery solution of hyoscyamus, the liq. opii. sed., with a pledget or poultice over the lint. From a consideration of the predisposing cause you will infer the propriety of attending to diet and regimen; when great debility exists, you are to employ bark, quinine, and wine, with a light nourishing diet. In St. Thomas's Hopital it is customary to allow a mutton chop, with eggs and milk." *Medical Times, Dec.* 4, 1847, *p.* 129.

113.—OINTMENT FOR SCALD HEAD

Norway pitch, 30 parts; turpeth mineral, 15 parts; red oxide of mercury, 15 parts; lard, 100 parts. Mix. The ointment to be applied night and morning.—*Journ. de Med.* *Prov. Med. and Sur. Jour., Feb.* 9, 1848, *p.* 129.

114.—TREATMENT OF SCABIES.

This method consists in covering the affected parts with oil, slightly heated to favour its absorption, three times a day. The itching completely subsides in three days; the eruption dries up and desquamates, the redness and swelling disappear, and the patient is generally cured in twelve days. The application should be continued a few days to insure success. The almond, linseed, nut, and other oils, and even simple lard, will produce the same effect. *Medical Times, Jan.* 1, 1848, *p.* 214.

115.—ON TRAUMATIC ERYSIPELAS.—By BRANSBY COOPER, Esq., F.R.S.

[Traumatic erysipelas will not show itself without constitutional predisposition, arising from epidemic or endemic causes; but when this predisposition exists, the slightest injury to the tissues may give rise to the disease: hence, arises the propriety of postponing operations on hospital patients, when erysipelas is present in the ward. This is especially applicable to operations on the head and face, regions in which erysipelas is very liable to occur: a liability depending, Mr. Cooper thinks, on the fact that in the head and face most of the muscles are inserted into the skin. With reference to the tendency to metastasis which exists in erysipelas, Mr. Cooper says:]

The consideration of this fact forms a very important point in regulating our practice, and especially in erysipelas of the head; for, however proper it may be to attempt suddenly to subdue erysipelatous inflammation of the limbs or trunk, by the application of evaporating lotions, or any other means of abstracting the abnormal heat of the affected part, such treatment is quite inadmissible in erysipelas of the head or face, owing to the danger of producing metastasis to the membranes of the brain.

I have more than once seen a patient delirious a few hours after cold had been applied to an erysipelatous scalp, and restored as quickly to consciousness by the substitution of warm fomentations for the evaporating lotion. The rationale of this is sufficiently obvious: the action is due to the free anastomosis between the vessels of the pericranium and of the dura mater, through the substance of the bones of the skull; so that any cause that propels the blood from the pericranium must produce a proportionable influx into the vessels of the dura mater. Patients attacked by erysipelas (more especially in this metropolis) bear depletion very badly, and there are but few cases in which general blood-letting can, in my opinion, be admissible. Leeches should never be employed in erysipelas, as their bite becomes a fresh source of irritation; and, indeed, it is frequently the exciting cause of this peculiar character of inflammation.

The only antiphlogistic plan, therefore, left, is that of acting upon the secretions, which effect is readily produced by employing the following remedies:—℞. Hyd. chloridi. gr. iss.; pulv. jacobi veri, gr. iij. M. Ft. pilul. ℞. Magnes. carbonat. gr. x.; sodæ sesquicarbonat. ℈j.; vin. ipecac. ʒss.; mist. camphoræ, ℥j. M. ft. haustus adde succi limonis recentis, ℥ss. et in statu effervescentiæ sumendus bis terve quotidie. Should the patient evince any typhoid symptoms, ammonia should be substituted for the soda.

If there be much tension of the skin, attended with small blisters, without remission of febrile symptoms, it should be punctured in several places, to allow of transudation of the effused serum. This operation generally affords great relief. With respect to the long incisions recommended by some surgeons, I consider that practice to be worse than useless, unless there be extensive sloughing of the cellular membrane, which will very rarely occur if punctures be made as soon as the necessity for such relief is indicated by the tension of the skin; indeed, I have known fatal sloughing sores induced by the practice of incisions, and in more than one case death occurred from the hæmorrhage immediately resulting from the operation. When erysipelas becomes diffused, the vivid discoloration of the skin diminished, the tongue dry, and the general signs of debility manifested, stimuli are required; but in common cases generous support is preferable to stimulus: I therefore usually prefer porter to wine or brandy, excepting under the circumstances above mentioned.

Where the inflammation of erysipelas has a great tendency to spread, it has been recommended to attempt to check its course by cauterising with lunar caustic the skin above the inflammation. Some have recommended mercurial ointment to be employed with the same view; and indeed I have seen both of them produce beneficial results by circumscribing the extent of the inflammation. I presume that the lunar caustic and the mercurial ointment close the pores of the skin wherever it is applied, and, preventing the natural cutaneous exhalations, set up a new action, and so tend to prevent the spreading of the erythematous inflammation; for, as far as I have observed, any other ointment will answer the purpose as well as the mercurial. This fact would certainly lead one to the belief that erysipelas is, at any rate at its commencement, a cutaneous disease, and the extension to the subcutaneous tissues the result of a secondary action.

Medical Gazette, Nov. 12, 1847, p. 823

116.—ON CHILBLAINS.—By Professor S. Cooper.

It is found that exposure of a part to intense cold while in a state of perspiration is more likely to be followed by chilblains than its exposure to the same degree of cold when it is simply warm. Of itself cold cannot produce true chilblains.

The treatment is pretty well understood, and generally agreed on. If you have them in the first and second degree of severity, you are to use friction, and rub well with the camphor liniment, or the soap liniment, to every five parts of which you may add one part of the tincture of cantharides; the liquor plumbi diacetatis, or a mixture of two parts of sp. vini camph. and one part of liquor plumbi diacet. Abroad, they immerse the parts in ice-cold water two or three times a day, rub them dry and cover them with a leathern sock; but this method is not universally applicable, and must not be used with patients disposed to phthisis or gout, nor with delicate females. I have already observed that the inflammation which accompanies chilblains is rather languid, and, as they have not much power of reparation, they therefore require stimulants. Ulcerated chilblains should have stimulating dressings, as a solution of the nitrate of silver, Peruvian balsam, a mixture of liquor plumbi acetat. and liquor calcis, or a lotion of chloride of lime, which is recommended by Lisfranc; this may be applied by means of lint. Some practitioners are very partial to a poultice in the first instance, made of oatmeal with some port wine, and they think it is of great benefit. The treatment of chilblains in a state of mortification is conducted upon the same principles as in other instances of gangrene.

Medical Times, Jan. 1, 1848, *p.* 210.

AFFECTIONS OF THE EYE AND EAR.

171.—ON THE TREATMENT OF GONORRHŒAL OPHTHALMIA.—By M. RICORD.

M. Ricord's treatment is as follows:—The patient is to be kept quiet; the head should be raised, and the eyes completely secured from light; the diet very low. The first thing to be done is to rub the nitrate of silver over the affected surfaces, so as to produce a white film. After cauterization the eyes should be sedulously washed with warm water. The patient should be watched after the first use of the nitrate; it will then be perceived that the secretion is momentarily suspended by it, but when the crust formed by the caustic falls off, the pus reappears, but is lighter in colour, and sero-sanguineous. So long as little white streaks, the result of cauterization, remain visible, and so long as the secretion is not again purulent, it may be judged that the influence of the nitrate continues, but if the secretion has become again purulent, the cauterization may be repeated; indeed it can be safely used three times a day. The eye must be repeatedly cleansed during the day, and poppy-head fomentations be constantly applied; poultices are to be eschewed, as they favor œdema. Mercurial frictions are injurious at this stage, not so at a later period.

If there be chemosis, this state should, if possible, be removed, while it is merely the result of œdema; when it has become phlegmonous, the conjunctiva is so distended as to be with difficulty seized with the forceps. The excision should be preceded by cauterization, and is to be made with curved scissors and flat forceps. When chemosis has reached the phlegmonous state, it cannot be excised, and is to be scarified. If there be much febrile action, blood is to be taken from the arm. Leeches may be placed in the course of the jugular vein, or behind the ears. Mustard pediluvia are to be avoided, as the essential oil is apt to irritate the eyes. Blisters on the nape are advisable on the decline of the disease.—*Abstract of Lecture in the Lancet*, Feb. 12th.

Provincial Medical and Surgical Journal, March 22, 1848, *p.* 163.

172.—ON THE TREATMENT OF PURULENT OPHTHALMIA OF INFANTS BY DOUCHES.—By M. CHASSIAGNAC.

M. Chassiagnac has for the last six months employed irrigation of the eye for the treatment of the ophthalmia of young infants with the greatest success: so that while formerly blindness at the Foundling Hospital was constantly occurring from this cause, it is now seldom so produced there. The child is laid on a table, and water allowed to flow from a small tap through a tube over the surface of the eye during from 5 to 15 minutes several times a day. M. Chassiagnac has discovered that in this disease a pseudo-membrane is frequently produced, the removal of which much expedites the treatment. The mortality of children suffering from disease of the eyes during the last ten years, was 1 in 3; while this plan has been adopted, it has been but 1 in 8. In the course of investigation. this means was found applicable to several other inflammatory conditions of the eye, and also especially for the removal of opacities of the cornea, which resist ordinary means. Accounts of its really remarkable success in this last important application, have just been published by one of the assistants at the hospital.—*L'Union Medicale.* No. 140.

British and Foreign Medico-Chirurgical Review, Jan. 1848, *p.* 278.

119.—ON SLOUGHING OF THE CORNÆ FROM DEFECTIVE NUTRITION.—By W. Bowman, Esq , F.R.S., Surgeon to the Royal Ophthalmic Hospital.

On the 8th March, a mother, herself reduced in strength and looking ill, brought her infant, 13 months old, to the hospital, on account of its eyes. I found that both corneæ were in a state of slough, flaccid, of a pale yellow, like macerated leather; that this slough comprised the whole area, except a very narrow belt of about 1-20th inch nearest to the sclerotica, from which a few minute vessels were shooting towards the line of separation which was already beginning to be established between the dead and the living parts.

The conjunctiva exhibited very little vascularity, and had evidently not been suffering from inflammation. The infant was pallid and puny, with a pinched and anxious countenance. I found that the mother had been suckling the child till seven weeks from the time I speak of, being herself ill and weak, and very insufficiently nourished; that on going into the workhouse they had been parted, and that she first noticed the eyes to look "weak" three weeks since. The bowels have been constantly purged for eight days; and she has taken rhubarb and magnesia. The compound powder of chalk, with opium, was given every four hours, with liq. cinch. of Battley, and beef-tea, with small quantities of brandy, and Mr. Howard kindly undertook to visit her at her own home. On the 11th (three days afterwards,) I found more evidence of vascularity at the margin of the corneæ, and over the white of the eye, but with hardly any secretion. The bowels had been less relaxed, but the stools still green and loose. She had taken some wine and bark, but would not touch the beef-tea. She was evidently weaker, and moaned constantly. In two days afterwards she died.

In this instance we find the cornea falling into a state of gangrene from defective nutrition; the impoverishment of the blood, manifested in various degrees in the other textures of the body, here leading to the complete destruction of a tissue which naturally has a very small supply of that necessary fluid, and which therefore is but too ready to yield its vitality when that supply is withheld. The case of this poor child finds a parallel in others which have been related, as occurring from actual starvation, or the privation of all sustenance, and perhaps still more aptly in those animals which Magendie confined to a diet of sugar and water, or other non-azotised food, and of which one of the more constant evidences of declining power was sloughing of the corneæ, and the consequent destruction of the eyeballs. I may also mention the case of a woman now in attendance here, and who, on her first appearance some months ago, had a dull, hazy state of both corneæ; the surface having lost its brilliancy, and the whole texture being uniformly obscured. The approach of this condition had been very gradual. It had been attended with no redness, nor was there, at that time, any excitement of the circulation in the neighboring sclerotica, or conjunctiva, or any development of new vessels in the cornea itself. She was pallid, but her muscular strength was not remarkably reduced, nor could I discover that she had been insufficiently fed in regard either to quantity or quality, or that she had any disease affecting a vital organ. Nevertheless, her pulse and countenance bespoke a system in which the powers of life, from some cause or other, were greatly depressed, and Mr. Dixon concurred with me in recommending a strictly tonic course of treatment, comprising steel and quinine, with such modifications in diet, place of abode, and mode of life, as her situation appeared to render desirable. Under this plan which has been continued up to the present time, a steady improvement has taken place in the corneæ. The haze is clearing away in the most gradual manner, and without any unnatural vascularity of the part or neighborhood, and her looks are much improved in every respect. I cannot help regarding this affection as simply the result of an impairment of the nutritive process in the whole body showing itself in a special manner in this texture of feeble power. *Med. Gaz., Nov. 12, 1847, p. 828.*

120.—ON OPACITIES OF THE CORNEA.—By W. Bowman, Esq, F.R.S., &c.

[If the laminated tissue of the cornea has itself escaped disorganization, the diseased products may be absorbed, and the cornea may resume its transparency. But if the elements of the laminated tissue are at all displaced or destroyed, permanent opacity will follow, since the new tissue deposited is of less elaborate organization, is opaque instead of being translucent, and fibrous instead of being lamellated. Mr. Bowman makes some very interesting observations upon this subject, but we have only room for those which have a practical tendency.]

It is to be observed, that during the progress of the reparative process, there exists in the part and its immediate vicinity a quantity of fresh material of that kind which denotes an over-activity of the nutritive function, and which, not being wanted for conversion into permanent tissue, will in due course be absorbed. This augments the opacity while it lasts; and it is not till a certain time has been allowed for its removal, after the healing of the breach, that we can say how extensive or deep the permanent opacity may prove; we may generally venture to predict a gradual improvement during some time, in a recent opacity, particularly in young subjects.

What I have now said applies to the greater part of the more common opacities of the cornea; I may allude to one or two other forms which may prove interesting in regard to the question of their precise seat. There are some varieties which appear to be on or near the very surface of the cornea, and which it is probable may occupy the anterior elastic lamina. The very opaque chalky-looking films which often follow the application of quicklime or new mortar to the eye, seem to be of this kind, and so, also, do those which have been supposed by some to be stainings of the surface of the corneal tissue by a deposit from the lead lotion in common use. Occasionally we have a superficial excoriation of the cornea—one can hardly call it an ulcer—which the epithelium limits with abrupt edges, thus favoring the accumulation, on the depressed surface, of the frothy mucus or sud which the movements of the lid furnish. The opacity thus produced is often very opaque, and, unless you were aware of its cause, might seem more serious than it really is. A lens, or the point of a needle, will inform you of its real nature.

There is another form of opacity, which I believe to have its seat in the anterior elastic lamina, although it is vain to endeavor to prove it, except by a section of the parts. It has a silvery lustre, and a very fine texture of interweaving striæ, and it creeps very gradually from near the border, over the surface of the cornea, towards the centre. The epithelial surface retains its smoothness and lustre, and the opacity does not appear to have much depth. Other varieties of opacity, very chronic in their course, and evidently not inflammatory, are liable to form, as I believe, in the same tissue. They may be of a brown tint, with an indefinite margin, and may affect both corneæ at the same time. I am not aware that these are particularly described in books, nor whether they admit of removal, or even arrest. They are probably connected with an imperfect nutrition of the eyeball, and must be left to take their course.

There is a variety of opacity consisting of minute dots, sometimes so small as not to be distinguished separately without a lens; at others, as large as a small pin's head. These are evidently seated on the posterior part of the cornea, and may be referred to the posterior elastic lamina. They accompany an inflammatory affection in which the walls of the aqueous chambers seem to be chiefly involved, in which the iris is usually mottled and dull, the pupil inactive, and the sclerotica more or less injected. Such a dotted opacity was long since pointed out by Mr. Wardrop, and admits of removal, provided the proper treatment is commenced early enough. It probably consists of an ordinary inflammatory deposit of lymph.

There is still another kind of dotted opacity, occurring in the posterior elastic lamina, which I would distinguish from all those yet mentioned, and which is met with in eyes which have suffered a slow disorganizing process, through sympathy with the opposite organ previously lost by operation or accident. In this the dots are remarkably round and separate from one another, often brownish, and therefore overlooked, and scattered pretty uniformly over a portion or the whole of the cornea. Though these sometimes grow fainter under appropriate treatment, I have never seen them altogether removed. *Med. Gaz., Nov.* 12, 1847, *p.* 832.

121.—ON THE LOCAL TREATMENT OF CORNEITIS.—By Dr. Jacob, Dublin.

Local applications, except a sedative stupe or tepid lotion with the view of allaying pain if present, are not called for, and in the early and acute stage, such stimulating applications as solution of nitrate of silver or the *vinum opii*, sometimes resorted to, should of course be carefully avoided. At a subsequent period, when the increased vascularity and sensibility of the conjunctiva, induced by the inflammatory action, exist, during what is generally considered the chronic stage, remedies of this description may be used with advantage; but as the principal mischief is so much beneath the surface, and so liable to be aggravated by any irritation, great caution must be exercised in their application. For the removal of the diffused opacity of the cornea proper, which I have described, stimulants may be employed, but not until every trace of inflammatory action has long disappeared. From the variety of stimulants used from time immemorial to remove opacities of the cornea, and the number of them extolled as infallible, it may be presumed that any stimulant will answer the purpose. Solutions of nitrate of silver, sulphate of copper, sulphate of zinc, or the combination called *lapis divinus*, will perhaps answer. I use a solution of iodide of potassium, ten grains to the ounce of water; or, as a substitute for animal bile, said to be effectual, touch the surface with a camel-hair pencil, previously dipped in water and brushed two or three times on soap. The fumes of prussic acid, so much vaunted as a quack remedy, I have not used, being dangerous and troublesome. If this nostrum has any influence at all, it is as any other stimulant. It should be recollected that this diffused opacity, not being a cicatrix from ulceration, disappears in time, and I have no doubt that its disappearance is often delayed by the premature and unnecessary use of stimulants. It is not to be forgotten, that as the inflammation frequently, if not generally or always, extends to the membrane lining the chamber of the aqueous humor, the pupil should therefore be occasionally dilated by belladonna to prevent adhesions. A sedative lotion containing a drachm of good extract of belladonna in eight ounces of fluid, applied with a scrap of old linen occasionally during the day, will answer the purpose, and if it does not, the outside of the eyelids and the brow must be painted with the softened extract.

It is scarcely necessary to add, that for the removal of this disease, the apparent cause of it, or at least the cause of the predisposition to it should be removed. Generous diet, pure air, and comfortable clothing, will often do more than medical treatment. I have more than once seen it disappear in an ill-fed, badly clothed child, after removal from a close room in the city, or a damp cottage in the country, to a comfortable bed in the hospital, without the administration of any medicine.—*Dublin Medical Press*, November 3, 1847. *Monthly Jour., Dec.* 1847, *p.* 441.

122.—ON RHEUMATIC IRITIS.—By James Dixon, Esq., Surgeon to the London Ophthalmic Hospital.

[Mr. Dixon sums up a lecture on this disease in the following words:—]

It chiefly attacks the fibrous tissues of the eye, and is always attended with pain, such as accompanies inflammation of similar structures in other parts of the body. The phenomena are eminently those of vascular engorgement; the sclerotic exhibits a peculiar red tint, and bloodvessels become visible in the iris, where they are never seen in a state of health.

There is little tendency to effusion of fibrin, as compared with the syphilitic inflammation; but, although the fibrin is poured out in small quantity, it is deposited in a situation eminently injurious to vision—namely, between the posterior surface and pupillary margin of the iris and lens. In the cornea there is marked disposition to inflammatory deposit, and consequent opacity, and this frequently becomes more marked as the inflammation in the sclerotic and iris subsides. Abstraction of blood, active purging, and attention to the function of the skin, are the chief points to be attended to in the more active form of the disease. Mere depletion, however, must not be persisted in too long, but must be followed by tonic treatment, to prevent a tedious subacute stage, which otherwise inevitably occurs. Above all, it must be remembered, that the slightest trace of fibrinous effusion demands the employment of mercury, and that, by allowing this effusion to go on, vision is always permanently impaired. The speedy employment of counter-irritation seems the most likely means of getting rid of those products of inflammation in the cornea, which are hardly less injurious to vision, than deposit in the pupil itself. *Lancet, March* 4, 1848, *p.* 254.

123.—ON THE TREATMENT OF SCROFULOUS OPHTHALMIA.—By Dr. Edwards, Physician to the Bath Eye and Ear Infirmary.

[Dr. Edwards recommends M. Morand's plan of treatment for scrofulous ophthalmia, which consists in the application of a strong solution of nitrate of silver to the nasal mucous membrane; there being generally a swollen and inflammatory state of this membrane in conjunction with the ophthalmia.]

The caustic which M. Morand employed was the nitrate of silver, either in substance, or in solution, or ointment; it was applied for the first week night and morning; after this every day, and latterly every second or third day. He particularly advises, that, after cauterization, a deep inspiration should be taken, so that the effects should be as extensive as possible.

[Dr. Edwards gives several cases in illustration of the good resulting from such treatment. We select the first.]

A young gentleman, aged nine years, had for two years frequent attacks of scrofulous ophthalmia of the left eye; during the last five months he had been little, or not at all, benefited by the general and local means I employed, both of which have been such as are directed by the best authorities on diseases of the eye. In the middle of April, 1847, the left nostril appearing extensively irritated, (as in fact it had been ever since his eye became affected,) I determined upon employing the nitrate of silver to it, which I did, in solution, (a scruple to an ounce of water,) extensively over the nasal fossa: this was repeated every day for a week, when a great improvement was manifest; the photophobia was so much less that he could open his eye without aid, to allow me to examine it, even in a considerable light. The caustic was then continued every other day for ten days, and after that twice a week for a fortnight, when my patient was quite restored; a slight patch of opacity of the cornea, however, remaining. As I have before remarked, I employed the same general remedies as in other cases, but discontinued any direct application to the eye, except an ordinary collyrium containing bichloride of mercury and wine of opium.

[Dr. Edwards has found the same mode of treatment extremely successful in ozæna. He says.]

In this disease (ozæna) lotions of nitrate of silver or sulphate of copper injected up the nostrils do good; but they appear not to be so useful as the caustic directly applied in substance, or in very strong solution, by the surgeon: such lotions might be rather used as adjuncts. A swelling of the upper lip is a very frequent attendant, and I am sure it has yielded more readily to cauterization of the nose than any other remedy which I have seen put in force. *Lancet, April* 8, 1848, *p.* 389.

194.—ON SUBACUTE INFLAMMATION OF THE TYMPANUM.—By W. R. WILDE, Esq., Surgeon to St. Mark's Hospital, Dublin.

[In the last Part of Retrospect, (p. 236) we inserted part of an interesting article by Mr. Wilde on acute myringitis. Besides this disease, there is a subacute inflammation of the membrana tympani, which although perfectly painless, is equally destructive to hearing with the first. Deafness, which appears rather suddenly, is the first symptom which attracts the patient's attention. On this affection Mr. Wilde says:]

The nature of the disease is only to be learned by a careful inspection of the membrane, which, if we see the disease early, is always of a pink colour, of a tint somewhat paler than that of the monthly rose. Through this, dispersed in various directions, we observe in some cases a few long, tortuous vessels. The transparency and polish of the membrane are seldom much affected at first. The auditory canal does not usually exhibit signs of disease, but the ceruminous secretion is arrested. Generally speaking, there are no constitutional symptoms present, and when tinnitus is an accompaniment, it is usually of a very light character, resembling a slight buzzing or singing. If allowed to proceed unchecked, the membrane becomes thickened and remarkably opaque, from lymphy deposits, and the deafness which ensues is of a most irremedial nature. Collapse or drawing inwards of the tympanal membrane does not usually follow this form of the affection, but ulceration, even to perforation of the membrane of the drum, is not an uncommon attendant upon it.

This disease is slow in its progress, and requires very careful watching. Cases of this nature have been, I feel convinced, repeatedly treated as "nervous deafness." I am inclined to think that it is a true myringitis, in which inflammation is seated in the fibrous layer of the membrane. In this disease mercury is just as necessary as in that already detailed; it should, however, be given after a different fashion: to be effectual, it must be slowly introduced into the system, so as to produce a steady and gradual effect. The mouth should be kept sore until there is a decided improvement both in the vascularity and in the hearing, or until all hope of restoration has been abandoned, or other circumstances induce us to relinquish this mode of treatment.

[The preparations of iodine, and counter-irritation over the mastoid process, are also useful. In these inflammatory diseases the secretion of cerumen is arrested, and is not restored until long after the original disease has been relieved: nothing, Mr. Wilde tells us, "produces a healthy action in the parts so soon, while at the same time it immediately supplies the best artificial succedaneum, as the *unguentum citrinum fuscum*, the soft brown citrine ointment, applied to the auditory passage in a melted state, with a soft brush." To relieve the tinnitus aurium, which also remains after the inflammation has been subdued, Mr. Wilde uses the *Arnica montana*. He says:]

The preparation I find most efficacious, is the tincture both of the flowers and leaves, of which the patient should commence by taking fifteen drops in a table-spoonful of the infusion of arnica, and a little of some cordial tincture three times a day. After a few days the dose should be increased one or two drops daily, till it reaches thirty, or even more, unless headach or giddiness be produced, when we should at once lessen the dose, or omit the medicine altogether for a short time.[*] The state of the bowels should be carefully attended to during the administration of this drug.

When ulceration exists, we should touch the part daily with a solution of lunar caustic, applied with a fine brush. The same mode of treatment is applicable to perforation of the membrane, and I have latterly been astonished at the number of cases in which under this treatment, or touching the edge of the perforation with a fine point of the solid nitrate of silver, applied upon a *porte-caustique*, together with proper constitutional treatment, these apertures have healed up. After an extensive trial of various other escharotics, such as the nitrate of mercury, and the sulphate and nitrate of copper, I find the preparations of silver the best. *Dub. Quar. Jour. Feb.* 1848, *p.* 82.

125—ON DEAFNESS IN SCARLATINA AND MEASELS.

Dr. N. Morrell, in the Annual Report to the Board of Directors of the New York Institution for the Deaf and Dumb, remarks that in twenty-five cases of death from scarlatina, wherein deafness had been a common symptom, the lining membrane of the Eustachian tube, on being examined, presented a character similar to the throat and nostril, being more or less changed, probably very red during life, but after death pale and thickened or softened, and uniformly covered with a thin glairy secretion, in which floated a great number of ash-coloured shreds, probably changed coagulable lymph, certainly not the natural mucous secretion of these membranes. This state extended uniformly through the Eustachian tubes quite into the tympanum, in which some of this changed secretion was always discoverable. The membranes lining the external meatus partook of the state of the skin: the natural secretion of wax seemed to have been nearly or quite suspended, and the membrane covered with many minute points, from which issued a sero-purulent secretion instead of wax. In fifteen cases of death from measles, where symptoms of deafness occurred during their progress, the membranes of the Eustachian tube, and tympanum exhibited, on examination, traces of red vessels ramifying in all directions, together with a remarkable dryness, as if the mucuous secretion had been suspended some time before death. The membrane of the external meatus showed that the secretion of wax had been interrupted also. So the exanthemata affect every portion of the tegumentary system. The lining membranes of the auditory passages of the vagina, uterus, and bladder, suffer alike with the skin. In the cure of deafness produced by the exanthemata, syrup of sarsaparilla, made after the old formula—to which may be advantageously added the root of rumex crispus, and the tinctures of the bark of prinos verticillatus and chymaphilla umbellata—is a remedy of the first importance; next, the muriate of lime, an old remedy now much neglected; and lastly, iodine and its preparations as internal remedies. Blisters kept perpetually discharging, placed behind the ears or on the arms alternately, form the remedies to be applied externally. The fauces must be well rubbed with a smooth piece of alum twice a week to be occasionally alternated with a solution of nitrate of silver, or when the tonsils are prominent, with the solid caustic not too heavily applied. Lastly, the external meatus must be cleansed once a day with warm brandy, or warm brandy and water, or a solution of iodine, or a decoction of the bark of prinos verticillatus. Perseverance in this course for months, sometimes for more than a year, finally ends with complete success, if the treatment have commenced before disorganization of the external or internal ear. *Medical Times, December* 11, 1847, *p.* 57.

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[*] The following is the formula for the tincture prepared for me by Messrs. Bewley and Evans. One ounce and a half of the *flowers* to a pint of rectified spirit of wine; macerate for fourteen days and strain; or, for the tincture of the *leaves*, the same quantity infused for a similar period in proof spirits. In prescribing these I usually order them in equal proportions.

Dr. Neligan says: "This tincture may be readily prepared by percolation, having previously macerated the flowers with a little of the spirit for twenty-four hours; or it may be prepared with the cut and bruised root in the proportion of ℥ii. of the root to Oj. of rectified spirit. Dose, f. ʒss. to f. ʒ i."—*Medicines and their Uses.*

MIDWIFERY,

AND

THE DISEASES OF WOMEN.

126.—ON REFLEX UTERINE ACTION.—By Dr. W. TYLER SMITH.

[Dr. Smith devotes much space to show how little the act of parturition has hitherto been studied, and how very few writers have considered uterine action as being of a reflex nature. He says:—]

A few paragraphs by physiologists, a few pages by obstetricians—and and these latter chiefly occupied by the purely mechanical part of labour,—make up the sum of our knowledge of the physiology of parturition. How is this to be accounted for? It certainly is not that parturition is a less important function than digestion, or respiration, or even the circulation of the blood, all of which have been so amply investigated. The uterus has been compared by a distinguished living physiologist to the stomach, as being the organ of nutrition and support to the species. We may, with equal or even greater justice, say that the uterus is to the race what the heart is to the individual: it is the organ of circulation to the species. Ages are the channels in which created beings circulate; and man passes continually from the womb of his mother onwards to the womb of time. The succeeding generations of human kind, following one after another, are, as it were, the pulses of the animal Cosmos. Parturition is the systole of the uterus, the unimpregnated state its diastole, and the living beings which flow on in countless numbers are as inconsiderable in the great stream of life as the myriads of globules revealed by the microscope are in the circulation of the blood. Viewed in this way, parturition does but assume its just proportions, and asserts its rights to the attention of the physiologist, as the greatest epoch in generation.

We must go on to develope the dynamical *Idea*—the physiological mechanisms of labour, of which, at present, there exists, within the pale of obstetricity, nothing but the bare data or formulæ for their working out—namely, the muscular structure, and the nervous endowments of the uterine system. The generation is but just passed away which denied the muscular structure of the uterus; and the very existence of the nerves of the uterus some are still found to deny. However, granting that the nerves and muscular fibres have been beautifully delineated by the scalpel of the anatomist, it remains still to study these parts in action. They exist as a picture, but they have not been studied as actors or performers in a drama; and there is even more difference between anatomy (as we now understand the term) and physiology, than there is between painting or sculpture, and dramatic representation. *Lancet, Nov.* 20, 1847, *p.* 542.

The Reflex actions of the uterus are very numerous, and it is upon these, and the numerous extra-uterine reflex actions excited during the process, that the natural performance of parturition essentially depends. Contraction of the uterus, from irritation of the mammæ, as in the act of suckling the child; contraction of this organ from the cold water douche, applied to the vulva or the abdominal surface; contraction excited by irritating the rectum, as by stimulating enemata; or of the stomach, by drinking a gulp of cold water; of the ovaria, by the presence of the menstrual nisis, of the vagina, by manual irritation, as in "taking a pain;" of the os uteri by irritation, as in the introduction of the hand into the uterus,—are all to be considered as so many instances of reflex spinal action. Thus, in parturition, the uterus may be excited, in a reflex form, by irritation of the mammary incident excitor nerves; the pubic and abdominal branches of the intercostals; the rectal; the gastric division of the pneumogastric; the ovarian nerves; and also by the nerves of the vagina, and the os and cervix uteri.

Many of the different forms of abortion—particularly when the causes are extra-uterine—strikingly illustrate the reflex action of the uterus. A series of cases of abortion would be one of the best expositions of reflex uterine action. Abortion may be caused by irritation of the mammæ, from the sucking of an infant, after milk has ceased to be secreted, as in cases in which the mother becomes pregnant during lactation: abortion may be excited, as a morbid reflex act, from irritation of the bladder, by a calculus; by irritation of the trifacial nerve, as in cutting the dens sapientiæ; by the mechanical irritation of coitus; by plugging the vagina; by disease of the os and cervix uteri—malignant or simple induration, inflammation and ulceration; by the irritation of the placenta attached within the uterine mouth; by ovarian irritation in ovarian disease; by irritation of the rectum, as from ascarides, and the use of irrigating purgatives or enemata; by puncturing the membranes, and evacuating the liquor amnii, so as to bring the head of the fœtus to act as an excitant to the os uteri; by irritation of the inner surface of the uterus itself, in cases of blighted fœtus, where the ovum acts as a foreign body; by riding on horseback, or any other violent exercise calculated, by succussion, to bring the head of the fœtus into violent contact with the os uteri: and by other sources of irritation to incident spinal nerves which might be enumerated.

All these are so many instances of uterine reflex action, the distant parts of the economy being brought into connexion with the uterus through the medium of the spinal marrow and its special incident excitor and reflex motor nerves. These facts are of most extensive practical application in devising means for the prevention of abortion.

In the cases of abortion in which the irritation is applied to the os or cervix uteri, or the internal surface of the organ, the immediate action depending on the irritability of the uterus itself is called forth, in connexion with true reflex action; but in the instances in which a distal organ is irritated, there can be no doubt whatever of the purely reflex nature of the uterine action which ensues.

In the lower animals, reflex parturient phenomena are constantly observed; the expulsion of the egg of the common fowl has been caused by sprinkling a few grains of salt upon the vulva or velabrum; cold injections have been empirically, to excite uterine contractions during foaling or calving, in the mare and cow; and the tipula and libellula have been observed, during the period of oviposition, to deposit eggs, whenever they have been shaken upon rough paper, or when the surface of the abdomen has been irritated in any way: these insects, the silkworm moth, and others, go on with the work of oviposition even when the abdominal have been divided from the thoracic portions.

But besides the uterine reflex actions, there is in the Expiratory actions, supervening in the course of labour, from the irritation of the presenting part of the fœtus, another remarkable series of reflex parturient actions, extra-uterine in their seat, but which combine and harmonize in a remarkable way, with the reflex actions proper to the uterus. It is found that tumours in the vagina, or the introduction of the hand of the accoucheur, may produce the same result as the pressure of the presenting part of the child in labour. It has been noticed of tumours, which produce little or no disturbance while they remain in the cavity of the uterus, that no sooner do they pass from the uterus into the vagina, than "bearing-pains," as they are termed, are produced. In other words, the action of the expiratory muscles is excited in a reflex form by irritation of the vaginal mucous surface.

In fully-formed labour, then, we have to study the reflex actions of the uterus in combination with the reflex actions of the respiratory muscles, as they are excited in parturition. By these latter reflex actions, the cavities of the thorax and abdomen become involved as auxiliaries to the uterus, and their expulsory actions combine with the proper reflex action of this organ, to effect the expulsion of its contents. But there are also opportunities of observing the reflex action of the uterus singly, such, for instance, as in cases of paraplegia from disease of the middle portion of the spinal marrow. Here the reflex expiratory efforts, the influence of volition and emotion, are entirely withdrawn, it being quite impossible that these actions can be brought into play when the connexions of the uterus with the medulla oblongata, and the cerebrum, the centres of the respiratory and voluntary actions, are severed. Labour is, in such cases, reduced to very simple elements, being performed solely by the reflex action of the uterus and its peristaltic power.

In natural labour, after the process has fairly commenced, it is the ovum which furnishes the chief stimulus to the incident excitor nerves, in its transit through the different portions of the parturient canal. Besides the mere enumeration of the various spinal excitors, by the irritation of which the uterus may affected physiologically or pathologically, we shall have to study the order and succession of the normal reflex actions, uterine and extra-uterine, occurring in labour. Parturition is not one reflex act, but a function, the combined result of many such actions, aided by other powers; and we must study the preliminary phenomena, the different stages of the process, and the final accomplishment of the function when we shall find that Nature has at her disposal a wonderful succession of stimulus and action, exactly adapted to the dilatation of the os uteri and the vagina; the propulsion and expulsion of the fœtus; and providing, also, for the safe contraction of the uterus, and its return to the unimpregnated state.

The uterus, as a motor organ, stands alone in many respects: unlike the rectum and bladder, it is not directly influenced by volition; and, unlike the heart, it is extremely prone to reflex action; it most nearly resembles the œsophagus, which is uninfluenced by the will, but is endowed with reflex motor and peristaltic action. It, however, differs from the œsophagus in the great number of excitor surfaces with which the spinal system places it, in relation; neither is there any other organ—not even the stomach—which acts as a spinal excitor to so great a number of organs as the uterus and its excitor nerves, whether we consider it in the impregnated or the unimpregnated states. Hence the physiological necessity for the abundance of nerves recently discovered.

Besides the reflex action of the spinal marrow and its system of excitor and motor nerves, there is the direct action of the spinal marrow,—though this does not play the important part assigned to it by MM. Serres, Brachet, and Segalas,—in which the central organ and its motor nerves, to the exclusion of the excitors, are involved. The state of the circulation affects all the motor organs under the control of the spinal marrow; and they act with increased energy when the circulation is either plethoric or anæmic, though in the latter, exhaustion of the nervous energy quickly ensues. Thus, there is one puerperal convulsion of hœmorrhage, when the heart and bloodvessels have been drained of blood, and another of fulness of the circulation. Want and excess of blood, or materies morbi in the circulation, acts as direct stimuli to the spinal centre, and thus the state of the circulation materially affects the uterus during labour. There are also certain agents of the materia medica, which, taken into the circulation, affect the spinal marrow. Thus, the ergot of rye, passing into the blood, affects the uterus by a direct spinal action; so does strychnia, so does the inhalation of carbonic acid, and so, I believe, does ipecacuan—the influence of which in producing uterine contraction is very remarkable. Savine, aloes, alcohol, and the biborate of soda, may probably be added to the same list.

[After referring to the other motor powers concerned in the act of parturition. Dr. Smith says:—]

Volition may be said to affect the process only indirectly. Emotion has a direct influence, but it is accessory rather than essential to its performance. Reflex action is the great physiological power, which being absent, the function of parturition could not be properly performed. Peristaltic or Immediate action is the basic or radical power upon which the other causes of motor action operate. Here, as in other instances, "knowledge is power!" to know the various sources and modes of motor action is almost equivalent to the ability to guide and control their impulses.

Delivery may be effected under a variety of circumstances, and we may consider every new condition in which there is a departure from the natural method as in reality an experiment offered by Nature, and of use in illustration of normal parturition. Delivery may take place in cerebral paralysis, in which volition only is withdrawn—the influence of emotion, all the reflex motor actions, and the peristalic action of the uterus, remaining. It may occur in profound coma, where volition and emotion are both withdrawn, all the reflex and the peristaltic actions being present. It may also be effected in paraplegia, from disease in the middle portions of the spinal marrow, in which volition, emotion, and the respiratory reflex actions, are cut off; the reflex actions of the uterus itself, and the peristaltic action of the organ, only remaining. It will hardly take place except in rare instances, but it may be excited, as by electricity, even in cases of paraplegia from diseases affecting the lower segments of the spinal marrow, where volition, emotion, and all the reflex actions, uterine and extra-uterine, are removed, and where peristalic action exists alone. It may even take place at the moment of death, or some hours after dissolution, when it may be excited by the spasm of death itself—by reflex actions continued after death; by the rigor mortis—this peculiar condition affecting the uterus in common with the heart and other muscles; by the peristaltic action continued after death; or by all these actions combined. But putting aside everything save the post-mortem spasm, it is no more wonderful for the uterus to contract and expel its contents after death, than it is for the heart to contract to such an extent as to empty its cavity; for the œsophagus of a rabbit to swallow food; for the œsophagus and cardia of the human subject to expel flatus, as I have seen happen; or for the intestines to contract violently after death—facts, all of which have been repeatedly observed. The excessive action of the uterus before death probably increases its tendency to contract after death. It has been observed, that after death from fevers, attended by spasmodic actions, the post-mortem contractility of the voluntary muscles is remarkably increased.

These different conditions under which the expulsion of the fœtus may take place in health, disease, or even after dissolution, afford in themselves a very admirable analysis and synthesis of the various motor powers by which natural parturition is performed. So far, however, from being used in this manner, such facts have hitherto been made a source of confusion, and the occurrence of delivery after death has been thought to afford positive and conclusive proof that the uterus is, in natural parturition, altogether independent of the nervous centres. *Lancet, Dec.* 4, 1847, *p.* 595.

127.—ON VOMITING DURING PREGNANCY.—By Dr. Churchill.

[A patient under the care of Drs. Maguire and Churchill, was seized with severe sickness about the sixth or eighth week of her third pregnancy. Notwithstanding the administration of opium, effervescing draughts, prussic acid, creasote, aperients, ether, lime-water, lemon juice, ice, &c.; and the employment of bleeding, leeching, sinapisms, fomentations, &c., the vomiting continued most obstinately, and she became extremely reduced and emaciated. On October 16th, when the pregnancy was between three and four months advanced, the report is :]

Vomiting incessant all day, and distress inexpressible. On my visiting her, I found her far worse than I had ever seen her, and I really cannot convey by words her agony. When not actually vomiting she suffered more torture from nausea; she lay tossing about in the bed or suddenly throwing herself out of bed, and would roll about on the floor. Her sighs and groans were mingled with shrieks and petitions for relief. Her face was haggard, her eyes sunken and surrounded by dark circles; her body was little more than skin and bone; her stomach retained nothing for a moment; the pulse at 130, and very weak. Occasional suffocation distressing. We heard the interior souffle, but could not hear the fœtal heart. Ordered a little brandy and water. Hoffman and Valerian and the anodyne enema at bed time. 17th.—Vomiting dreadfully all night and day, nothing whatever remaining on her stomach; great debility and emaciation; perceptibly weaker each day; pulse 130, very weak. Teaspoonful of brandy and water every hour, and chicken broth. Opium suppository at night. 18th.—Worse than ever; in such agony as I never before beheld; pulse 130; has taken no food, and is utterly exhausted; placental souffle heard, but not fœtal heart. As no medicine afforded any relief, and as each attack had been worse than the preceding, and as her condition appeared to us to be one of imminent danger, it was clear that some change of plan must be made immediately.

We had tried bleeding, leeching, blistering, opium in several forms, antispasmodics, lime water, acids, calomel, creosote, prussic acid, stimulants of various kinds, without any apparent benefit, for though the sickness subsided twice, it did not appear to be the direct effect of medicines. On the other hand, the want of food and the constant irritation of nausea and vomiting, had utterly exhausted the patient. She had little or no sleep for five nights; had not retained a particle of food; the pulse had long been 130, and now was rapidly becoming weaker. She was utterly helpless; less restless than before from sheer weakness; her countenance was drawn and sunk; in short, we could no longer doubt that another week of such suffering would end fatally for our patient. Under these circumstances, after most anxious reflection and consultation, and with a painful sense of the responsibility, we decided upon bringing on premature labour, unless some decided change had taken place, at our visit next day. 19th.—So far from any improvement, our patient appeared to be rapidly getting worse; I therefore gave her 40 grains of recently powdered ergot of rye, which she retained three quarters of an hour, but which produced no effect. It was repeated an hour after, and again vomited. As it appeared to increase the burning pain at her stomach, without appearing to act upon the uterus, no more was given. In the evening, she was lifted on the sofa, and whilst there, there was a gush of about a pint of fluid (liq. amnii) from the vagina, with some slight pain. 20th.—No rest during the night, and no pains. Desirous to avoid repeating the ergot, I passed a bougie into the uterus this morning, and on October, 21st, it was evident that the liquor amnii had escaped, as no fluid followed the introduction of the bougie, nor did uterine contractions come on. We were now greatly distressed: we wished to avoid giving up, and yet, the introduction of the bougie had been ineffectual, and our patient was palpably sinking. During Oct. 21, we endeavoured to keep up her strength by brandy and water and chicken broth, but with little success. 22nd.—As we had no other means at command, we determined again to try ergot. Two doses were given, and though they added to the discomfort of the stomach, after the latter we found distinct uterine pains coming on at intervals during the day and night, but the vomiting, fainting and exhaustion, rather increased. The stimulants were continued. 23rd.—Uterine pains continued at intervals during the day, though slight; prostration excessive—in fact, her friends thought her dying; pulse 160; nothing remains on the stomach. A stimulating injection was given.

24th.—Remained in the same state during the day, but at night the pains increased in frequency and strength, and at 4 a.m., October 25th, a macerated fœtus, with its secondaries, was expelled without hæmorrhage. She vomited twice that day, and once the next morning, but never afterwards. She now took nourishment, and in a fortnight was perfectly convalescent.

I have entered into this lengthened detail, that you might see the wretched state to which the patient was reduced, the fair trial which the usual medicines had, their failure, and to acquit us of rashness in having recourse to the only means left to save life. That we waited long enough, there could be no doubt; there was a misgiving in our minds for some days, that we had waited too long; but the result disproved this, and afforded us boundless gratification.

P.S. Since the first part of this paper was published, another case has occurred to me, not less remarkable and instructive, though the result has been less favorable.

On the 12th of December I was requested by Mr. Young, of this city, to visit Mrs. S. with him. She was above forty years of age, had borne six children, and was in good health up to seven weeks ago, when she was attacked with severe dysentery, which after the usual treatment, subsided, or rather was superseded by incessant vomiting. For the last few weeks she had retained nothing on her stomach, and was in consequence reduced to the greatest degree of weakness and exhaustion. The emaciation was excessive, and she was literally skin and bone. She was confined to bed, and suffered great agony from retching, both night and day; her pulse was 120, and so weak as to be barely perceptible. I carefully examined every organ of the body, but could find no disease. I thought I could discern a fulness over the pubes, and I asked her if she was pregnant. She did not think so, although her catamenia had been absent four months, and certainly she had no corroborative symptoms. Upon anxious consideration of the case, however, I still inclined to the belief that she was in the family way, and as all the usual remedies had been tried by Mr. Young without success, I proposed to pass a bougie into the uterus for the purpose of bringing on abortion, if she were pregnant. This I did on the 15th of December, but no liq. amnii escaped, and my fears as to the correctness of my diagnosis and the result to our patient were great, for it was quite evident that in her present circumstances she could not live a week. I inserted into the os uteri a small roll of lint, and left at three, and on my visit the next day I found a fœtus of three months lying on the bed. Labor came on in the morning, and she was delivered without much suffering, and without hæmorrhage. The fœtus was macerated, and had evidently been dead for some time, which accounted for the absence of stethoscopic signs of pregnancy.

From this moment the vomiting ceased, she took proper nourishment, and for two days made a favorable progress; but she was then attacked by obstinate and continued diarrhœa, which resisted every remedy, and under which she sank about six days after delivery. This case is of great interest in these particulars. 1st—As affording another example of a patient reduced to the verge of death by the vomiting of pregnancy. She was worse when I first saw her than the case I have just related, although the vomiting had not continued so long. 2nd,—The diagnosis was unusually difficult.

The patient was near the age at which menstruation ceases: did not believe herself pregnant, had no other symptom but the absence of the catamenia, and the vomiting; and the attack had come on at the termination of dysentery. 3rd,—The success of the operation was perfect as regards the vomiting. She took food and drink immediately after delivery, and never vomited again. But we find that we may not defer the operation beyond a certain point without danger. When I saw this patient, she was so much reduced that she could not have lived another week, but this state of exhaustion rendered an attack of diarrhœa fatal, which might have been borne very well had she been stronger. Had I seen her sooner, I have scarcely a doubt that she would have recovered.

British Record of Obstetric Medicine, Feb. 1, 1848, *p.* 46.

128.—ON THE CAUSES OF ABORTION.—By Dr. W. TYLER SMITH.

[Dr. Smith divides the causes of abortion into two classes, *excentric*, or irritation of the extremities of excitor nerves, and *centric*, or irritation of the spinal centre. Among the first or excentric causes of abortion he mentions irritation of the mammary nerves; this operates in cases of undue lactation complicated wtih a second pregnancy. In such cases, though the constitutional debility helps to produce the accident, yet the local irritation is a distinct cause of abortion and may be efficient in its production when there is no particular debility. Dr. Smith observes further]

It is curious that irritation of the stomach, between which and the uterus there is such a distinct relation, shonld *not* produce abortion. After parturition, the slightest gastric irritation will excite contractions of the uterus; but during pregnancy, gastric irritation, and sickness, even to death, may occur without disturbing the fœtus in utero; on the contray, sickness seems positively favourable to the continuance of utero-gestation. The synergies between the lungs and the uterus are equally remarkable. The uterine phenomena of utero-gestation retard the progress of pulmonary disease, but if the most extensive disease of the lungs exist, it does not excite abortion. An amount of pulmonary disease sufficient to cause death a few days after delivery may exist, without any interruption to the natural duration of pregnancy.

Irritation of the *trifacial nerve* will sometimes excite abortion. It happens when no other cause can be recognized but the appearance of the dens sapientiæ, and this phase of dentition is well known to produce considerable local and constitutional disturbance. General convulsions may, in fact, be excited from this source, either in the male or female subject. The reflexion of irritation from the trifacial upon the uterine nerves, in young pregnant women, it is no more remarkable than the strangury excited by teething in the infant. Extraction of decayed teeth during pregnancy is another cause of abortion in which the trifacial is concerned. There is a well known synergy between the uterine system and the teeth during pregnancy, leading to toothache and caries; and there is also a tendency to reflex action in the direction *from* the teeth *to* the uterus. These facts and their rationale require to be borne in mind in the management of pregnancy.

Irritation of the *vesical nerves* is, in rare instances, a cause of abortion, as when patients conceive who are the subjects of chronic vesical irritation, or when there is stone in the bladder. The uterus itself reflects irritation upon the bladder during pregnancy, so as to exaggerate the effects of any primary vesical irritation which may exist.

Irritation of the *ovarian nerves* is a very frequent and important cause of abortion. It is a well recognised fact, and one upon which I have often had occasion to dwell, that the majority of cases of abortion occur at what would have been menstrual periods. In such cases it is the ovarian nisus, and the attendant irritation of the ovarian nerves, either alone or combined with other causes, which excite the uterus to expel the ovum. The ovarian excitor nerves act in such cases just in the same way as they act in bringing on natural labour at the completion of the full term of pregnancy. Almost all women can perceive the menstrual periods as they pass through utero-gestation, particularly at the first three or four periodic dates. Those who have suffered from menorrhagia or dysmenorrhœa, or in whom organic ovarian disease has existed before conception, recognise the menstrual nisus most clearly, and it is precisely in these subjects that abortion is most likely to happen. Abortion in the early months is common during the grand catamenial climacteric; it constitutes, in fact, one of the chief dangers of this epoch. In all cases of abortion caused by irritation of the ovarian excitor nerves, the most common time for the occurrence of the accident is at the second, third, or fourth periods, but it may happen at any one of the periods. In cases where the abortion depends upon irritation of other excitor nerves, or upon erythismus of the spinal centre, the periodic ovarian irritation often determines the time of the accident.

Irritation of the *rectal nerves* is a common cause of abortion. This variety of abortion is obvious when the accident occurs from hæmorrhoids, or from operations for their removal; the presence of ascarides in the rectum; the employment of irritating purgatives, particularly aloes, in excess, or the use of irritant enemata, or from the occurrence of severe diarrhœa or dysentery during pregnancy: obstinate and long continued constipation, or any other great irritation of the lower bowel and its excitor nerves, may occasion abortion. Irritation of the *vaginal nerves* sometimes excites abortion. Plugging the vagina is one of the means resorted to for the artificial production of premature delivery; the mechanical irritation of coitus will sometimes produce abortion, and this cause must be divided between the os uteri and the vagina.

In cases of threatened abortion with hæmorrhage, the danger of the accident is sometimes increased by the plugging of the vagina resorted to in order to arrest the loss of blood. This fact should always be borne in mind when the plug is resorted to in hæmorrhage of any kind occurring during utero-gestation. It is possible that in arresting the hæmorrhage we may ourselves cause abortion.

Irritation of the *uterine nerves* is, beyond doubt, the most important of all the causes of abortion. Abortion may occur without any other apparent disorder of the ovum of the uterus, except an absence in the uterus of the proper disposition to growth or developement. The uterus will grow to a certain size, and then an arrest of developement appears to take place, which ends in the expulsion of the ovum. In other cases, the fœtus dies, and becomes a foreign body, directly irritating the uterus to throw off its contents. This cause of labor involves the whole subject of intra-uterine pathology, and of all the disordered condition of the fœtus, membranes and placenta. The separation of the membranes from the walls of the uterus, and the effusion of blood, or disease of the placenta, are important causes of abortion. Puncturing the membranes, and bringing the fœtus in direct contact with the parietes of the uterus by the evacuation of the liquor amnii, will excite abortion in the same manner. In the abortion excited by violent horse or carriage exercise, the accident depends on the mechanical irritation of the os and cervix by the fœtal head, in consequence of the succession. In principle, the abortion caused by equestrian or carriage exercise is precisely the same as the ovi-position excited in the tipula or libellula, by shaking these insects upon rough paper. Irritation of os uteri by coitus; the use of the plug; vascular irritation and inflammation; ulceration of the os and cervix, will, if continued, excite reflex actions of the uterus, terminating in the loss of the ovum. Another uterine source of abortion is the implantation of the placenta over the os and cervix uteri. The presence of the placenta in this abnormal situation excites the uterus from within, in the same manner as the plug from without; hence the frequency with which placenta-prævia cases terminate in premature delivery. When speaking of ovarian irritation as a cause of abortion, I mentioned that this danger was chiefly incurred during the early months of pregnancy. In placenta-prævia, on the contrary, owing to the greater developement of the placenta, and the anatomical changes occurring in the os and cervix uteri as pregnancy advances, the danger of abortion in these cases increases with the duration of pregnancy. Different tumours, malignant or non-malignant, attached to the os and cervix, or to the parietes of the uterus, when they excite abortion, act after the same manner. To the long list of uterine irritations issuing in abortion, I may add injuries of the uterus itself from external violence, and inflammatory disease of the uterine tissues.

All these causes, it will be observed, whether vaginal, mammary, vesical, rectal, facial, or uterine, are purely excito-motor in their operation. The irritation is applied to the excitor nerves, and reflected through the spinal marrow upon the motor nerves and the uterus. It often occurs that two or more causes are in operation at the same time. The reflex contractions of the uterus which constitute abortion are not excited, as in the case of respiration or vomiting, immediately on the application of stimuli. If cold water be thrown upon the breast, the movements of inspiration—if the fauces are irritated, the movements of vomiting—are instantly produced. But it is not thus in the case of the uterus. Though this organ is so distinctly under the control of the spinal marrow during, and immediately after labour, so distinctly, indeed, that asperging the abdominal surface soon after delivery produces instantaneous uterine contractions, yet, during pregnancy, no reflex actions sufficient to cause abortion follow immediately upon the application of the ordinary stimuli of excito-motor action. It requires that the nervous arcs in relation with the uterus should be irritated for a considerable time, and an excitable state of the uterine nervous system is then produced, during which reflex actions are readily excited by slight causes.

The nervous arcs presiding over parturition are, to a certain extent, isolated from the rest of the spinal system. If it were not so, and if the uterus immediately obeyed an excitor stimulus like the stomach, abortion would be the rule, normal parturition the exception. There are certain facts which show this independence of the nervi-motor apparatus of ovi-expulsion in a remarkable manner. I may mention one fact and one experiment. Dupuytren relates the case of a woman who became the subject of traumatic tetanus during her pregnancy, but who, nevertheless, recovering from the tetanus, passed safely to the end of utero-gestation without abortion. A frog taken during the time the oviduct was full of ova, was rendered tetanic by strychnia for a considerable time; the ova were not expelled during the presence of tetanoid symptoms, but several days afterwards, when they had entirely disappeared, ovi-position took place in the ordinary way.

All the excito-motor causes of abortion are, in fact, imitations of the ovario-excitor cause of natural parturition at the end of utero-gestation, only in many cases, instead of the ovarian nerves being the inducers of the uterine nervous excitability which terminates in premature expulsion, it is the mammary, vaginal, rectal, &c. In the instances where ovarian irritation is the cause of abortion, the cause of abortion is precisely the same, and acts in the same manner as the cause of natural labour, the only difference being that of the *time*. I have said that oftentimes more causes of abortion than one are in operation; thus uterine irritation may produce the irritability or excitability of the uterine nervous system, but before this irritability has actually produced expulsion, irritation of the rectum may step in and complete the abortion. One point I would insist on most emphatically—namely, that in cases of vesical irritation, or rectal irritation, we cannot correctly talk of the extension of the nervous irritation from these organs to the uterus, by structural contiguity and continuity, or because they are supplied by nerves from the same source.

Vascular phenomena may so extend from one organ to another in the same vicinity, but nervi-motor phenomena never can. There are abundant vascular anastomoses to account for such vascular phenomena, but there are no anastomoses of nervous fibrils. However close the irritation may be to the motor organ, all the motor action which does not depend upon irritation of the muscular fibre, or upon sensation or emotion, is reflex in its form. The uterine contractions, of abortion caused by irritation of the rectum and bladder—nay, even of the uterus itself—is as much reflex as the contractions excited by trifacial, gastric, or mammary irritation. I insist on this point, because I frequently observe relaters of cases speaking of motor sympathies between the bladder, uterus, and rectum, as though there was some short cut between these organs, whereas there is no motor connexion or route whatever, except it be through the spinal centre, and by way of the excitor and motor nerves. In all, there is the excitor nerve, the spinal centre, and the reflex motor nerve concerned; at one end of the nervous arc there is the physical irritation, at the other, the motor contraction. As in other cases of excito-motor action, sensation may be present, but it is by no means essential. Physical irritation of the excitor surfaces, short of sensation or pain, may produce all the phenomena of abortion. This is one of the facts which renders the due recognition of all the excito-motor causes of abortion so essential to the prevention and treatment of this accident.

We may look on abortion as, in some points of view, comparable with spasmodic asthma, or any other excito-motor disease. From some irritating cause, an excitable condition of the excito-motor arcs presiding over parturition is induced, just as in the case of asthma, where it is the respiratory nervous arcs which are similarly affected. In either case, the excitability, once induced, slight causes of irritation, which in healthy subjects would produce no disturbance whatever, are sufficient to excite, in the one case, spasmodic respiration; in the other, morbid or spasmodic parturition. Besides the ordinary periodicity of abortion—namely, the tendency to premature expulsion at the catamenial dates, there is another periodicity observable in abortion, in the tendency to the occurrence of miscarriage in successive pregnancies at a particular time. It often happens that we may see in these cases the obvious physical cause of abortion developed at the special times; but in others there seems to be a habit, or periodicity, the nature of which we cannot understand.

Centric Causes of Abortion.—But besides the causes of abortion involved in physical irritation of spinal excitor nerves, there are other causes in which the circulation and the *spinal centre* are chiefly concerned. There are certain erythematic conditions of the system in which abortion is very prone to occur. These are, the exanthemata, particularly small-pox, and syphilis, in each of which a special poison is introduced into the blood; the pyrectic state of the system which obtains at the commencement of the non-specific fevers and simple inflammations of the viscera, is attended with similar danger; the scrofulous diathesis, too, has been considered as prolific of abortion as the syphilitic; but, I believe, with far less justice. The inhalation of carbonic acid rapidly excites abortion, and during accidental or intentional poisoning by this gas the ovum is often found expelled. During the celebrated razzia in Algeria, in which a great number of Arab women were suffocated in the caverns of Dahra, those of them who were pregnant were found to have aborted. Military histories offer examples of the same kind in other countries. I believe the retention of noxious elements in the blood, in the albuminuria of pregnancy, to be a cause of abortion as well as of puerperal convulsions. There are also certain specific agents, as the essential oil of savin and the ergot of rye, which, if persisted in, are adequate to cause abortion; and lastly all the agents recognised in toxicology may cause abortion as well as the destruction of the parent, when administered during pregnancy. In all these instances the blood is the medium by which the exciting agent is conveyed to the spinal centre. They are precisely similar to the artificial abortion which may be excited in the lower animals by direct mechanical irritation of the spinal marrow.

Another important cause of abortion, acting through the spinal centre, is *emotion*. This cause, unlike those which reach the spinal centre by the blood, is purely *psychical* in its nature. The influence of emotion in causing the uterus to evacuate its contents is as undoubted as the influence of emotion upon the stomach or upon the rectal and vaginal sphincters. But as in the case of uterine excito-motor action, ordinary emotion does not affect the uterus instantaneously. Time is required for the effects of emotion to develop themselves into uterine excitability. The rapidity with which emotion affects the uterus is proportionate to the intensity of the emotion. A violent fit of anger, serious fright, or intense grief, may lead to abortion a few days after the violence of the emotion has disappeared. During religious persecutions women have aborted suddenly at the stake; and here the emotion produced by excessive terror would probably be the chief cause of the accident. Thus emotion may, under extreme circumstances, act upon the uterus, and produce abortion, even more readily than ordinary excito-motor causes.

In the history of abortion, there has been a too general tendency to attribute the accident to some particular and almost universal cause. For instance, at one time abortion is referred almost exclusively to disease of the ovum; at another, to the strumous diathesis: at another, to disease of the os uteri: on this latter point I would be understood as not in the slightest degree undervaluing the researches of Dr. Henry Bennet, or Mr. Whitehead, of Manchester; but I contend that the study and recognition of ALL the manifold causes of abortion is necessary to the student and the practitioner.

Lancet, April 15, 1848, *p.* 409.

129.—MODE OF INDUCING PREMATURE LABOUR.—By Dr. Simpson, Edinburgh

Dr. Simpson has latterly used conical-shaped sponge tents for opening up the os uteri, in all the cases where he has had occasion to bring on premature labour. These tents are made of sponge dipped in solution of gum arabic, and dried under very strong compression. It is necessary generally to use several tents, and the last one must sometimes be very large. It is not by any means requisite to use the speculum in introducing these tents, as has been recommended and practised in Germany; they are very easily introduced with the finger alone, or by means of a simple bent wire handle, the point of which is passed up into their larger extremity. They are easily applied—cause the patient little or no pain or mischief, and they have generally the os uteri well opened before the labour begins. He has never, in any case, seen the membranes ruptured by them before the commencement of labour. And he believes that the preservation of the membranes was a matter of the first moment in regard to securing the preservation of the child. Dr. Hamilton had preserved the membranes, and saved fifty out of fifty-seven children; Dr. Meriman had ruptured the membranes, and saved twenty-three out of forty-one children. Dr. Simpson had noticed lately a proposal to induce labour by injecting water between the membranes and the uterus, in order to separate them. He considered this would be a dangerous practice, as the placenta might be separated as well as the membranes, and hemorrhage consequently ensue.

Monthly Journal, March 1848, *p.* 694.

130.—NOTE ON ABORTION.—By Dr. Radford.

¶ The finger must never be introduced within the os uteri during the early periods of abortion; indeed the length of the cervix offers an insurmountable obstacle to its coming into contact with the ovum, and the attempt cannot be made without great hazard. The body of the uterus is also changed by the abortive process, so that its tangible characters, presented to the finger, are very different to those of the same part, when in a normal gravid state, at the same date. It is found to be enlarged, in consequence of, and in proportion to, the addition it has received from the expansion of the cervix: by this alteration it loses its abrupt angle, and assumes one which is more obtuse, which continues to increase until the organ has acquired what has before been mentioned, an oviform figure; and no line of demarcation or difference can be traced to point out the artificial division of the organ. These changes are not always produced in the same time; in some cases they are rapidly effected, but in others a considerable time elapses before they are accomplished. Several very important inferences may be drawn from the above observations, but I shall leave them to be made by the reader himself, with this single exception that, if after a careful exploration, we ascertain that the figure, length, and thickness of the cervix uteri are normal, it is our duty to adopt every means calculated to preserve the ovum, and thus subdue the symptoms; but, on the contrary, if we discover that it is shortened, either partially or entirely distended, and that the organ has assumed, more or less, the oviform shape, we should assist, by all proper means, the expulsive action, whilst, at the same time, we pay proper attention to those contingent circumstances which are attended with danger. *British Record, March* 1, 1848, p. 81.

131.—ON STERILITY.—By Dr. E. Rigby, Lecturer on Midwifery at St. Bartholomew's Hospital, &c.

[In the Medical Times we have a series of Reports on the Diseases of Females, by Dr. Rigby, from which we take the following interesting remarks on "Sterility:"—]

In proceeding, says he, with the subject of *organic sterility*, I come next to consider those cases which are of a less aggravated sort, viz., where the os and cervix uteri are well formed, but *so contracted as* to prevent the occurrence of conception. This condition is occasionally attended with a swollen state of the anterior lip, and disposition to congestion of the part; the cervix feels hard and tense, and the mucous membrane covering the os is considerably gorged, and more or less studded with granulations, which soon lead to ulceration. The patient complains of pain in the back and loins, sense of bearing down, and many of the symptoms which characterize slight inflammatory action of the cervix uteri and ovary. She has pain on suddenly sitting down upon a hard seat, and on the passage of solid fæces, occasionally darting pains; frequent and sometimes severe pain in one or other ovarian regions, usually the left, and more or less leucorrhœa; with these local annoyances there is considerable derangement of the stomach, liver, and bowels; the tongue is dry and rough, being covered with that peculiar short-napped fur (if I may so express myself) which indicates a state of irritation, especially of the uterine system, in the female; the secretions are faulty; the pulse is weak; catamenia irregular in time, quantity, and quality, and generally preceded by much suffering. Mere dilatation of the os and cervical canal will frequently produce much relief to all the local symptoms, and as the general irritation resulting from their presence subsides, the health and strength improve rapidly. If, however, the contraction of these parts be very considerable, the dilatation produced by a tent is but of temporary effect; even wearing a metallic-plug in the canal for some weeks does not always succeed in producing a dilatation of any permanence, and after a short interval the parts are found as contracted as ever; under such circumstances the division of the anterior lip of the os uteri and corresponding portion of the cervical canal becomes necessary, and is of course a very effective measure. The following case ought, perhaps, (from the patient being a single woman,) to come rather under the head of dysmenorrhœa than that of sterlity, but, being a good illustration of the foregoing observations, I will venture to introduce it here.

S. K., aged 23, unmarried, delicately formed. June 20, 1846. Complains of dragging pain in the loins, and pain of a lancinating character in the hypogastrium, extending to the thighs. Bowels costive; appetite bad; tongue furred and rough; has pain in the direction of the rectum.

Exam. per Vaginam.—Os uteri low down and tender; uterine sound passed two inches and three quarters towards the left side; menstruated at seventeen, and has continued to do so regularly ever since, except after the first appearance, when it was entirely absent for ten months. She has always suffered severe pain for several days before each period, which is relieved by the appearance of the discharge; the discharge is quite natural.

[Tonics and alteratives were given internally, the os uteri scarified and nitrate of silver applied to it, and metallic tents used to dilate the orifice. For a time she was much relieved, but the symptoms returned; and in about fifteen months after the date of the first report, Dr. Rigby tells us,—]

Finding that her former symptoms were fast returning, and that the relief obtained by the metallic tent was but temporary, I admitted her into the hospital for women in Red Lion square, and divided the anterior wall of the cervix and lip of the os uteri; a metallic tent of the same size as before was introduced whilst the wound healed, so as to render the canal permanently open; and, after remaining in the hospital a fortnight, she left, being anxious to resume her work, on which she is entirely dependent.

Jan. 10, 1848. Has worn the tent until now, which is very much longer than I had intended her to do; is well in health; has lost the bearing down, and the catamenia have appeared healthily, and without pain.

16. Has worn the tent ten weeks; is much improved in health; the tent was removed.

In reviewing the history of this case, we find that its prominent features are those which indicate subacute inflammatory action of the os and cervix uteri, producing considerable irritation of the neighboring viscera, derangement of the digestive organs, and much disturbance of the general health. Dysmenorrhœa to a severe extent also existed, and evidently resulted from the very narrow canal of the cervix and small os uteri obstructing the discharge of the catamenia from the cavity of the uterus. The cavity itself had become enlarged by frequent distention at the catamenial periods, as indicated by the measurement of the sound—viz., two inches and three-quarters instead of two inches and a half; to which circumstance may also be attributed the inclination which it manifested towards the left side. I at first treated her merely for the prominent symptoms, hoping that, if I relieved the inflamed condition of the os and cervix, and attended to the general health, she would soon improve; and, being unmarried, I was unwilling to subject her to any local treatment beyond the application of leeches to the anus; these relieved her only for a while, and I soon found that I was making but little progress. The condition of the os uteri was, therefore, examined more accurately, and, being ascertained to be congested and granular, it was touched with nitrate of silver. The tongue and state of the bowels indicated also so much irritation of the intestinal mucous membrane that I was unwilling to give mercury, although the liver was inactive, and hoped to relieve the one and rouse the other by the combination of lime-water and taraxacum. I know of few medicinal agents to equal these in such cases, for there can be little doubt that mercury frequently increases the irritable state of the mucous membrane, and, if carried far enough, will even pave the way to actual ulceration. The caustic produced considerable relief for a while; but at a subsequent examination the os uteri was found so congested as to require scarification, which produced a free discharge of blood, and was followed by a greater degree of relief than she had yet experienced; still, however, the state of the tongue was far from satisfactory, and after a time her former pains returned. The scarification was repeated twice more, and with great relief; the general health improved, the catamenial periods became more healthy; still, however, some symptoms (lancinating pains, for instance,) continued unremoved, even when the effects of the treatment were most successful; and feeling that I could only bring her up to a certain degree of health, and with difficulty keep her there, and having on many occasions found that I could stop the inflammatory action, which so frequently accompanies these cases of contracted os and cervix uteri in irritable habits, by temporary dilatation, I passed a smooth metallic tent into the canal of the cervix; the introduction was attended with considerable pain; but this abated quickly, and she then felt a more complete and lasting relief than she had hitherto experienced. The general health improved; the catamenia came without the usual precursory suffering, and I felt convinced that in removing the contracted state of the os and cervix uteri, I had removed one, if not *the* great, cause of irritation upon which her symptoms depended. Still the disposition to inflammatory action in these parts was evidently not entirely subdued; the former symptoms began gradually to return, the health to suffer, and in the course of two months the os uteri was found as contracted as at first. A metallic tent was again introduced, and this, as on the former occasion, was attended with the same general relief and improvement of health. After wearing it ten weeks it was removed, and she continued to enjoy good health for four months, although it was but too evident that some of her old symptoms were beginning to return; in about a month more they had rapidly increased, and, feeling more than ever convinced from this second trial that permanent dilatation would be the only chance of permanent cure, I determined to divide the anterior wall of the cervix. It might have been more prudent to have waited a little longer to see the results, but, as I propose to lay before your readers some similar cases of much longer standing in my next report, I have detailed this one first, as it appeared best fitted for illustrating my subject. *Med. Times, Jan.* 22, 1848, p. 272.

[Dr. Rigby then relates the following case of organic sterility. The patient was 29 years old, and had been married eighteen months: she complained of constant uneasiness and pain at the lower part of the back, increased by the passage of hard fæces. She had always been the subject of menstrual irregularities, and appeared to have had inflammation of the cervix uteri about a year before. On October 20th, 1846, Dr. Rigby made an]

Examination per Vaginam.—Os externum and vagina very small; from which reason, and from the os uteri being so high up, it is reached with some difficulty; it is situated rather forwards, very small, nearly closed, and somewhat tender. The end of the cervix is so covered with a fringe of fibrinous excrescences, like minute polypi, that it is not easy to detect the os uteri at first. The upper extremity of the vagina is contracted and puckered, as if cicatrized. The uterine sound was introduced with much difficulty, and would not pass beyond the os uteri internum. I, therefore, introduced the dilator, and dilated slightly; on closing its blades, the instrument passed immediately into the cavity of the uterus; on introducing the sound, it passed to the extent of nearly three inches, and somewhat to the right, on introducing the speculum, which was done with much difficulty, owing to the contracted state of the os externum and vagina, the above-mentioned little excrescences could be seen. The os uteri was livid, cicatrized, and granular; a slight bloody discharge was flowing from the os uteri. Applic. argenti nitras ori uteri.

[Alterative and tonic medicines were ordered. The next report is on]

Nov. 10. Returned to town a few days ago, and I examined the os uteri with the speculum; it was more healthy. I applied the argenti nit. once more. Yesterday, after a little dilatation, I passed a taper sponge-tent, but to-day I find it has been of no use, having been dislodged by her cough. Dilated again to-day, and introduced a smooth metallic tent; the rough, cicatrized condition of the canal of the cervix was quite perceptible as it passed. Rep. med.

16. The metallic tent has been retained until yesterday, when it came away. The catamenia have come on.

20. The catamenia appeared on the 14th with slight pain; she had a little more pain the next day, but nothing like what she used to have. The discharge was natural in colour and quantity; no coagula. None of the upper pain of back. The lower or sacral pain seems connected with a hemorrhoidal diathesis, and confined bowels; says that quinine confines the bowels. I dilated the os uteri somewhat, and then passed a much larger metallic tent. Extr. taraxaci om. nocte: sulphur. precip. et magnes. carb. o.m.

Dec. 9. The tent slipped out last week, and she returned to town. The os uteri was still small; its lips very uneven from the above-mentioned little excrescences. I dilated it again, and passed a still larger tent; it produced great irritation at first, with vomiting and pain for some hours, which were relieved by hot semicupium, &c. Rep.

16. After wearing the tent a few days it slipped out, when the catamenia came on. I did not reintroduce it, as the canal of the cervix so quickly recovers its former contracted state. She has improved considerably in general health, so that in a month or so I will divide the cervix.

Sept 3, 1847. I divided the anterior wall of the cervix early in January, and she wore the metallic tent for a fortnight, until the incision was healed, without inconvenience. She writes to-day, giving a favourable account of herself—"Much better than I have been ever since I married," and "I am much stronger, and feel more *really well*, upon the whole."

[Jan. 6, 1848. She was reported to be in the fourth month of pregnancy. Dr. Rigby observes upon this case—]

The permanency of the effects produced on the os and cervix by wearing a metallic plug or tent, are variable: in some cases the part remains dilated for some little time, and now and then appears to continue so: but in many, as in the present case, it contracts immediately after the removal of the tent, and quickly returns to its former condition. The case which I have given in my previous report is in this respect very similar. As the metallic tents were expelled each time that the catamenia came on, we may, I think, infer that the uterus possessed a fair amount of contractile power, and that, therefore, the obstruction to the discharge of the catamenia from the nearly closed condition of the canal must have been very considerable. The termination of the case in pregnancy is what I had scarcely hoped for—the general debility and haggard appearance, the long history of previous ill health, and the unfavourable state of the uterus for conception, prevented any expectations of such an event: but after removing this constant source of annoyance and irritation to the system by dividing the cervix, and thus effecting a permanent dilatation of its canal, the health began rapidly to improve; and this favourable state was probably still further promoted by a change of residence to another part of England.

Medical Times, Feb. 12, 1848, *p.* 324.

[Dr. Rigby next proceeds to consider sterility arising from functional derangement. Acute and chronic inflammations of the ovary, which Dr. Rigby has shown to be causes of dysmenorrhœa and menorrhagia, are, he says, frequent causes of sterility. Dr. R. relates the case of a lady, mother of eight children, who, he says, after suckling her last child for fifteen months, became the subject of menorrhagia, with pelvic pains, anæmic headache, &c. The following is his account of the case :—]

Examination per Vaginam.—Uterus somewhat retroverted, so that the sound passes backwards. In the recto-vaginal pouch a tumour can be felt as large as a walnut, soft and excruciatingly tender when touched. The point of the sound does not pass into this tumour, (which would be the case if it were the fundus uteri,) although the sound passes through the os uteri rather beyond the usual distance; nor does the tumour move until the fundus uteri is carried upwards and forwards to its full extent, and then it rises only a little.

Examination per rectum shows the same mass in the recto-vaginal sac, and the point of the sound evidently in front of it; it is evidently the left ovary displaced and much inflamed. Hirud. vi. ovario sinistro.

℞. Pil. hydrarg. gr. iij.; ferri sulph., gr. ij.; ext. coloc. co. gr. v. M. ft. pil. ij. o.n.

℞. Acidi hydrochlor, dil., acidi nitrici dil. aa. ʒj.; infus gentinæ co., infus sennæ co., aa. ℥iv. M. ft. mist. cujus sumat. cochl. magna. ij. bis die.

25. Leeches were not applied; is much better in health: the pains of which she complained are much less.

Examination per Vaginam.—Pressure at the posterior part of the vagina on the left side still excites pain, but nothing like what it did the last time; the uterine sound again passes backward; the posterior wall of the uterus appears thickened, but this is not at all tender.

Examination per Rectum.—The swelling which I before felt in the recto-vaginal sac is greatly diminished, although still tender.

This tonic and alterative plan of treatment was continued, with a little alteration in the medicines employed; and in three months afterwards she was again examined.

Examination per Vaginam.—Uterus still somewhat retroverted, but on restoring it to its natural position the tumour can no longer be felt in the recto-vaginal sac, as before, but the left ovary can just be reached in the usual direction, and is intensely tender to the touch; slight pressure upon it also produces the pain in the left groin. Let her apply the antimonial ointment to the painful spot in the ovarian region.

July 27. Is considerably advanced in pregnancy. Health tolerably good; bowels confined. Rep. haust rhæi c., manna &c.

Oct. 1. Was safely delivered yesterday of a female child.

Experience proves that abortion is one of the most common causes of oophoritis, and, from the injury which the general health usually suffers on such an occasion, this inflammation is very apt to continue for some time, and assume a chronic form: the exacerbations of irritability and congestion which it undergoes at the menstrual periods, tend to aggravate this condition, and render it, in its turn, the cause of other affections, or even lay the foundation of organic disease. The symptoms of oophoritis, although by no means minutely given, are tolerably decisive. The pain in the left groin, and on sitting down suddenly, and the results of examination, place the latter beyond doubt; the presence of a tumour in the recto-vaginal sac, intensely tender to the slightest touch, is very characteristic of the ovary. I know of no other circumstances during examination per rectum or per vaginam where such utterly unbearable pain is produced by the slightest touch of the finger; and the manifestation of such suffering when investigating the condition of the recto-vaginal sac. is of itself strong evidence that ovarian inflammation exists. In the present case, the great value of Dr. J. Y. Simpson's uterine sound was strikingly shown, for not only did it enable me to discover the presence of a partial degree of retroversion, but, by raising the fundus uteri into its natural position, I could ascertain with perfect certainty that the painful tumour in the recto-vaginal sac was not the retroverted fundus, but the ovary. The displacement and inflammation of the ovary in cases of retroversion of the uterus, is a subject which requires further investigation: they exist in very various degrees, and, although the inflammation can exist without much displacement, the reverse can never obtain; indeed, so frequently do we see an irritable or inflammatory condition of the ovary attend retroversion of the uterus, that I cannot feel certain of being correct in pronouncing the abortion to have been directly the cause of the oophoritis here, but rather the retroversion, which, on its part, had been produced by the flaccid condition to which the uterus had been left after the expulsion of the ovum.

There can be no doubt that retroversion of the uterus, in the unimpregnated state, especially where of some standing, is quite capable of causing ovarian inflammation; the strain on the broad ligaments, and consequent obstruction to the returning circulation of the ovary, producing considerable engorgement of this organ. This effect, however, varies very much in different cases of retroversion; in some it is very severe, as in the present instance; in others, of long standing, not the smallest trace of ovarian suffering is manifested: these latter, I must own, are rather the exceptions to the rule. By far the most painful ovarian affection, in connexion with retroversion, is the descent of the gland into the recto-vaginal sac: the congestion of the ovary is necessarily much increased, it becomes much swollen and most excruciatingly painful. I have known it become as large as a small orange, the passage of fæces and every movement of the body being attended with fearful suffering, and on one occasion general peritonitis.

Another result of oophoritis thus produced is severe menorrhagia, of which I have given a remarkable case (Feb. 15, 1845). A very severe case of this sort occurred to me a few months ago, at some distance from London, where the extent of the flooding had produced a dangerous state of exhaustion; the uterus was retroverted, and the left ovary considerably inflamed; the continued recurrence of profuse menorrhagia from the slightest cause put all thoughts of mechanical support out of the question; it was equally impossible to relieve the oophritis by local depletion—firstly, because the cause of it (the retroversion) would be still in full force; and secondly, because the state of anemia (already becoming dangerous) absolutely forbade the attempt. I therefore directed the patient to use the prone position (by means of a large box on which a mattress, &c., were placed), and thus dispose the fundis uteri to incline forward by its own weight. The result was most successful: the hemorrhage ceased; the ovarian pain subsided; strength returned; and, under the able management of my friend, Mr. F. Elkington, of Birmingham, the uterine supporter was applied with the best results.

The effect of oophoritis in producing menorrhagia is a very interesting subject, and deserves careful attention, for there is scarcely any form of menorrhagia so severe as this, and, unless the real cause be detected, none more obstinate and difficult to treat. *Med. Times, March 25, 1848, p. 421.*

132.—ON UTERINE HÆMORRHAGE.—By W. Newnham, Esq., Farnham.

[The *active* and *passive* forms of uterine hæmorrhage may be distinguished, Mr. Newnham remarks, as far as practical purposes are concerned, by the quantity of blood lost in a given time. Of the causes of hæmorrhage from the uterus Mr. N. observes :]

There are other properties of the uterine economy, which render it especially liable to hæmorrhage, besides its excessive vascularity; as for instance, its great elasticity and contractility—the former admitting the very large development of its vessels, and consequent weakening of their parietes—while the latter is required to make the necessary pressure upon them, in order to assist in stopping their bleeding mouths. It is most desirable that these properties be borne in mind, because they have a material bearing upon many points of after-treatment. Another circumstance which materially promotes this tendency to hæmorrhage, is the absence of valves in the uterine veins. It is obvious, that the absence of valves must favour the profuseness of the bleeding, and must add to the paramount importance of securing *coagulation* to stop the mouths of the bleeding vessels: this should form one of the *principles* for the treatment of uterine hæmorrhage.

Again, it is to be recollected, that the capillary or exhalent arteries of the uterine system are very numerous—that they are distributed over the entire internal surface of the uterus, and that they terminate in minute orifices which always exhale a certain amount of secretion, and occasionally, or rather periodically, the menstrual fluid. Hence, another principle in the treatment of uterine hæmorrhage will be, *the diminution of arterial action*, this being directed by a knowledge of the source from which such action is derived, always recollecting that action and power are not coincident, and that the increased action may be dependent upon a want of power to control it.

British Record, March 1, 1848, *p.* 94.

In the early months, abortion being threat ened, and the expulsion of the fœtus having ocurred—the placenta being retained, it is always to be recollected, that the hand cannot be carried into the uterine cavity—this, therefore, being out of the question, the hæmorrhage will then become very moderate; and yet, notwithstanding, the attendant is not to be lulled into a fatal security, since it may recur at any moment when the separation of the placenta has commenced. In such cases, if there be nothing urgent in the symptoms, nature may be left to herself for twenty-four hours, but if after this time, the placenta has not been expelled, it will become necessary to inquire into the cause of its detention. For this purpose the hand must be introduced into the vagina, in order precisely to ascertain the nature of the case. If it be found that the os uteri is open, but that there is no trace of placenta, the exploration must not be carried further; no violence must be done to the uterus; the case must be left to nature—an aperient should be exhibited, or a large lavement should be given—and the case may be left for another twenty-four hours.

But if in conducting this examination, it is found that the placenta is partially expelled, and actually occupying the mouth of the womb, or that it is lying within its undeveloped neck, within reach of the finger, it may be attempted to be gently withdrawn by one finger introduced within the uterine cavity, or by a finger and thumb antagonistically employed in the vagina. And if the extraction of the placenta be not thus easily accomplished, recourse may be had advantageously to the little forceps so admirably adapted to this purpose, and recommended by Dr. Radford, of Manchester, which will be found efficient and useful:—at any rate this case is not to be abandoned to nature!—the practitioner's energies are not to slumber till they have provided for the patient's security—or in other words, till the placenta has been judiciously and carefully removed. In all these cases, the determination of the time for interference must be guided by the previous history and precise nature of the case, and by considering the patient's powers, and the peculiarities of her constitution, particularly with regard to hæmorrhagic tendency, or to the existence of any organic malady.

Not so with respect to retained placenta after the birth of a fœtus at its full term. Here to leave the work to nature would be criminal; and the accoucheur is never to quit his patient's bedside till it be accomplished. Usually the placenta will be expelled in a few minutes: its first detachment is easily known by the lengthening of the cord, and then it will very generally be found occupying the vagina. In this case, however, it will sometimes happen, that the placenta has been mainly separated, but that it remains attached by a small portion of its surface. If, as occasionally occurs, the placenta is of an unusually soft structure, great care will be required to remove the whole, and there will be much risk, lest the larger part should be detached, and a small adherent portion should be left behind. But perhaps pain is altogether suspended, and the uterus does not contract upon its contents so as to effect the separation: in this case a dose of opium is the best remedy.

Again, there may be a great deal of pain, and the uterus may contract a great deal, but does not expel the placenta, because it is implanted abnormally,—or it contracts spasmodically either at its orifice or in its middle, forming hour-glass contraction; and the placenta may be actually detached, and lying in one or other of these compartments. Here a full opiate is to be exhibited, and when its effect may be supposed to have been produced, the hand is to be passed into the uterine cavity. If the spasm has subsided, the enclosed or adherent placenta may be discovered; if merely retained, it may be carefully and easily removed; on the other hand, if adherent, the placenta may be gently separated, and then allowed to be expelled by uterine contraction, with the hand in the vagina. All this will be easily effected, if timely and gently manipulated.

[With regard to the general treatment of uterine hæmorrhage, Mr. Newnham observes:]

It is a very common practice to exhibit the mineral acids—alum, gallic acid; and in cases of chronic hemorrhage, these remedies may be employed with signal advantage; but in the active hæmorrhage to which our observations chiefly are addressed, they do not appear to exert any influence which can be relied upon; and great care should be taken that they be not trusted to, for by such confidence, we shall be losing sight of the more important agents. We must here notice the exhibition of the ergot of rye,—a remedy concerning which mistakes are constantly made,—and the employment of which requires much care and discrimination. It is not my intention to discuss its *modus operandi:* certain it is, that it has an astonishing influence, when judiciously administered, in augmenting feeble uterine contraction; and nobody can have witnessed its unerring agency without being convinced of its power.

Hence, it has been highly vaunted as a remedy in uterine hemorrhage, and under certain circumstances, it is unquestionably useful; but these circumstances are limited. It has been supposed to possess the power of checking hæmorrhage, and therefore it has been given in all sorts of bleedings. My firm conviction is, that it is perfectly inert when administered with this intention, and that if the production of the state of ergotism have any influence at all over hæmorrhage in general, it is by so poisoning the blood, as to diminish its vitalising influence, and thus checking its morbid flow, by decreasing the action of the heart upon its poisoned contents.

The only real good which the ergot can produce, is by *increasing* languid action of the uterus. I say, *increasing languid action*, because this it will never fail to do, when given judiciously. But it has been given to produce action of the uterus, and in this it will be found to fail repeatedly. It is not its locus standi to produce action where no action previously exists, but to increase the strength and frequency of pain, where pain already exists. Often and often have practitioners told me of their having tried ergot without any effect; and doubtless, because they have exhibited the remedy without thought, as mere routinists without a principled application of its powers. Ergot is not to be administered to produce uterine action, nor to check hæmorrhage, but to add to the power of feeble uterine contraction. Again, its exhibition is limited under many circumstances of uterine hæmorrhage in the latter months, not only by the fact of there being no uterine contraction, but even where there is feeble contraction, and there may be present co-existingly, the necessity, or the probable necessity for turning. No man in his senses would think of giving ergot where there was a probability of his being called upon to alter the position of the fœtus.

Again, it should at all times be very cautiously given when there is a *known* tendency to uterine inertia, and hæmorrhage after delivery: for the uterus having been violently stimulated to expel the fœtus, often falls immediately afterwards into a state of atony, and fearful hæmorhage may be the consequence. A dose of ergot exhibited immediately *after* the fœtal birth, may in such a case be oftentimes useful, and may prevent hæmorrhage by causing rapid uterine contraction, and the expulsion of the placenta. The exhibition of this remedy, therefore, will be useless in cases of threatened abortion, until the expulsive pains have actually set in; it will be useless in all cases where the expulsive nisus is wanting; it will be useless in all cases requiring turning; and it will only be useful in aiding feeble uterine action already established, though languidly.

Plug.—It may be sometimes useful thoroughly to plug the vagina in cases of uterine hæmorrhage, in order to facilitate the formation of a clot upon the mouths of the patent vessels, and thus to assist in arresting the hæmorrhage. But even here, there are cautions to be observed. Doubtless the employment of the plug can be traced back to the very earliest periods of obstetrical science; and in all probability the astringent pessary of Hippocrates must be considered in no other light than as a *plug!* In the early months of pregnancy, when there is threatened abortion, and the uterus is rigid, and will not yield to any trifling opposition to the flow of blood; or when hæmorrhage occurs from placenta prævia before the mouth of the wound is dilated or dilatable, then the plug may be employed with signal advantage.

But in the other formidable cases of uterine hæmorrhage in the latter months, it will be better not to employ the plug, where there is any danger of internal hæmorrhage going on unperceived, because the blood will not readily find its way out by the os uteri. In such a case, hæmorrhage which is formidable, but manageable, will be converted into a far more threatening condition, and perhaps may very speedily terminate existence. In all such cases, if the hæmorrhage be dependent upon accidental separation of the decidua, it is best to rupture the membranes, and leave the rest to nature; but in those cases of placenta prævia which will require turning it will be better to turn as soon as the os uteri is dilated or dilatable. Thus, the employment of the plug, however valuable in itself, is limited in its sphere of application, and will inevitably do mischief if applied indiscriminately. It has been said, that there is no risk in employing the plug, so long as the os uteri is rigid; but this is a mistake. The os uteri may be *rigid* while other fibres of the uterine body may be inert and yielding—and thus the greatest evil may be produced without our being aware of its presence.[*]

The *super-acetate of lead*, and *gallic acid*, are both of them occasionally useful in uterine hæmorrhage, but must not be relied upon with too great confidence. Nevertheless, these remedies are not to be rejected, but only to be considered as greatly inferior to

Opium. It is not perhaps every case of uterine hæmorrhage in which we would recommend the exhibition of opium, because there may be instances of plethoric constitution, in which the remedy might be useless and even injurious. But in every case of formidable bleeding the pulse is so rapidly sunk, and exhaustion sets in with such awful haste, and the pulse so soon becomes quick from irritability, and the nervous system gets disturbed, and unconquerable restlessness sets in, and the symptoms arising from the emptiness rather than the fulness of vessels are so prominent, that it is then we especially need the supporting influence of opium; it is then we shall find it as our *main point d'appui;* it is then we shall find it our stronghold, eminently worthy of confidence, and that which will carry our patient through dangers of the most appalling character.

We are not prepared to say in what way opium contributes its supporting influence to the vis vitæ, whether by its direct agency in soothing the irritated nervous system, or by producing that artificial fulness of the cerebral vessels, which preserves the vascular system from sinking, till other means have been timely employed; or whether by a controlling influence over the flow of blood; we will not take upon us to decide these questions. Suffice it to say, that the influence upon the patient is most marked, her jactitation is removed, sickness quieted, hæmorrhage lessened, cheerfulness augmented, pains relieved, apprehension and despondency gone, heart enabled to carry on its function, and generally the patient is rescued from despair to hope, from the shadowy border which separates life from death to the terra firma of convalescence.

To secure these effects an ordinary dose of laudanum will not suffice, or a single dose, however large; it must be given in the first instance as a dose preeminently large, and this must be frequently repeated, so as to keep hæmorrhage in check and support the vis vitæ, while other means may be employed. There is nothing to fear from large doses under these circumstances; they will not produce a narcotic effect, while their influence in supporting power is undeniable. Of the employment of galvanism on the one hand, or chloroform on the other, in the treatment of uterine hæmorrhage, I have not sufficient experience to venture an opinion.

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[*] [We think Mr. Newnham is here mistaken—if the reader will refer to Retrospect *Part XV, p.* 274, he will find our reason for dissenting from this opinion.—Ed.]

British Record, May 1, 1848, *p.* 149.

133.—ON PLACENTAL PRESENTATIONS.

[On this important subject, we have had lately several additional important papers and cases, which we subjoin.]

Dr. WOODHEAD met lately with the following abnormal expulsion of the placentæ in a case of twins. After the birth of the first child, the second presented naturally. When the membranes ruptured, a considerable quantity of blood escaped along with the water. On making an immediate examination, Dr. Woodhead found a placenta lying in the passages, on removing which he found it to be that of the infant still within the uterus. As the bleeding did not continue, he left the infant to be expelled by the uterine contractions. It was not born till twenty minutes after the placenta had come away; but, although still-born, it revived on the ordinary means being used, and it has continued to do well. The placenta of the first infant came away afterwards in the usual manner.

Dr. SIMPSON observed, that cases like Mr. Woodhead's were strongly illustrative of the curious pathological fact, that *complete* detachment of the placenta was accompanied by little or no hemorrhage; whilst the *partial* detachment of the placenta almost inevitably gave rise to severe and dangerous flooding. He cited different instances of complications in twin-births illustrative of this obstetric law, as for example the following,—

1. When, after the birth of the first child in twins, the placenta of that child is accidentally expelled and removed, the other retained infant and placenta generally remain in utero without flooding. Mauriceau, Denman, Cazeaux, &c., had stated, that under such circumstances flooding must necessarily occur, but the fact was—it did not, its non-occurrence being in obedience to the general law, that when the detachment of the placenta is complete, there is little or no tendency whatever to any attendant hæmorrhage.

Dr. Simpson cited cases from Dr. Collins' treatise illustrative of this, and mentioned others of the same kind which had been communicated to him by Dr. Dawson, Dr. Dickson, Dr. Campbell, &c. "Thus" writes Dr. Dawson, of Newcastle, "I have seen two cases of twins, where the placenta of the first came away before the birth of the second child. There was no hemorrhage in either case. Mr. Lang (Mr. Dawson adds) has met with two cases of this description, and also without hemorrhage;" But,

2. When, after the birth of the first child in twins, the placenta of the second child is accidently expelled, and an infant and placenta yet remain in utero, still there is generally no attendant flooding. Mr. Woodhead's case was an illustration of this. A case of the same kind had been related to Dr. Simpson by Dr. Andrews, lecturer on midwifery at the Westminster School, London. One of Dr. Andrews' pupils was in attendance. A placenta was expelled after the birth of the first child. Little or no hemorrhage occurred till the second infant was born. Some time afterwards, it was found that the previously expelled placenta belonged to it, and the still retained placenta belonged to the child that had been first born. Here, in a case of twins, there was a child and a placenta remaining in utero; but the remaining placenta was not the placenta of that child. And the placenta

which was previously detached and separated, had necessarily torn asunder the bag of membranes, leaving the portion of the uterine surface, to which it was itself affixed, exposed, without the exposure leading to any marked degree of hemorrhage.

3. In twins, between the birth of the first and of the second child, the two separate or double placentæ belonging to both are occasionally expelled, and no hemorrhage follows, although there is one child still retained in utero. Dr. Dewar of Dunfermline had reported two cases of this kind to Dr. Simpson. In one "the placentæ were firmly united, and were discharged after the birth of the first child. There was no unnatural discharge of blood. The mother did well." In the second case, "the mother had borne several children. The first child (which was at the full time) presented by the feet, and immediately after its birth, the two placentæ, connected by a membraneous but not vascular band, were expelled. Labor followed briskly, and, in little more than five minutes, the second child, which presented naturally, was born. The hemorrhage (Dr. Dewar adds) was very slight, and not greater than what occurs after some ordinary labors. The mother did well." It may be considered that in these two cases, the interval between the expulsion of the placenta and the birth of the child, was too brief to allow accurate observations to be made upon the degree of existing hemorrhage. This objection is answered by a third case of the same kind, mentioned to Dr. Simpson by Dr. Protheroe Smith of London. "I was (he writes) called to a patient some time since, who had given birth to one child, immediately after which a large double placenta followed without hemorrhage, leaving a second child in utero, which was expelled, dead of course, three or four hours afterwards, without further discharge of blood." Dr. Tyler published, two years ago, a similar case in *The American Journal of the Medical Sciences* for October 1843. After the birth of the first child, a double placenta was discharged. Two hours afterwards, the shoulder of the second child was found presenting, and the uterus in a state of "hour-glass contraction." Many unsuccessful efforts to turn the fœtus was made. At last its thorax was evacuated, and the breach brought down. The mother made a good recovery. "Here (observes Dr. Tyler) we have a case not merely of simple placenta prævia, but a double surface exposed, there having been two placentæ; the fibres of the womb, first, in a state of rigid contraction; then the irritation consequent upon the performance of the embryotomy: and lastly, a state of relaxation, and still not a drop of hemorrhage, and the female entirely recovered."

Monthly Jour., March, 1848, *p.* 692.

[Dr. Waller, of St. Thomas's Hospital, states that he entered upon this inquiry with a strong prejudice against the plan of treatment recommended by Professor Simpson, it being contrary equally to what he had been taught and what he was teaching. He says,]

The causes of hemorrhage during the pregnant state, whether it take place in the early or latter months, before or after the birth of the child, are the same, and they are twofold:—

1. A separation of the ovum, partial or more complete, from its attachment to the uterus: and

2. A want of due contraction in the muscular fibres of that organ.

If the connexion be perfect, the integrity of the circulation is preserved, and no blood can make its escape; but if there be any detachment, whether accidental or unavoidable, and the second condition above referred to be present, then the open mouths of vessels are exposed both on the uterine and placental surface, and blood must necessarily escape unless such orifices be closed again; and every practitioner knows that this much-to-be-desired effect can only with certainty be produced by the excitation of regular, persistent, and universal contraction of the uterine fibres surrounding these vessels, which, when in due action, form a very perfect tourniquet.

Professor Simpson believes that in cases of uterine hemorrhage, resulting from placenta prævia, the blood which is issuing forth does not proceed from the open orifices of the uterine sinuses, but from the detached surface of the placenta; and hence, naturally enough, concluded that by a complete separation of the after-birth, the circulation (maternal) through it would be arrested, and the bleeding of necessity cease. He made the trial in a great number of cases, and the result, as stated by him, was most satisfactory,—the bleeding did cease. Two questions presented themselves to my mind in the prosecution of the inquiry:—

1. Will the bleeding be arrested by the complete removal of the placenta from its connection with the uterus? and

2. Is Professor Simpson's explanation of this fact (if it be one) satisfactory?

I put the practical question first, because, if it be not answered in the affirmative, there is an end of the affair altogether; if, however, its truth be established, then is the second question of comparatively minor importance, inasmuch as I am not justified in rejecting the fact because I may not accord with certain views brought forward in explanation. Again, this point may be easily determined, as opportunities are perpetually occurring in which the efficiency of the proposed plan may be tested; and thus by the united experience of the profession, an accurate judgment might soon be formed. I have carefully examined my records of cases of placental presentations, and I find that the mortality has been greater than I had anticipated.*

Case 5.—Nearly complete placental presentation occurring between the sixth and seventh month of pregnancy. The labour proceeded slowly, and after the discharge of the liquor amnii, the practitioner was alarmed at a sudden and rather profuse gush of blood, and, therefore, requested me to meet him in consultation. On examination, I found the placenta attached nearly to the whole circumference of the os uteri, the hemorrhage trifling, the uterus firmly contracted around the body of the child, and the female in good condition. There was here no necessity for manual interference; in a short time the pains strengthened, the placenta was expelled, and soon followed by the fœtus, which was extruded in a doubled position, it having been a presentation of the back. There was no hemorrhage. Mother recovered.

Case 6.—In this case also the placenta was born one hour and a half before the child. The fœtus had been long dead; there was, therefore, no circulation through the placenta, and, consequently, no hemorrhage. Mother recovered. *Medical Times, Jan.* 8, 1848, *p.* 233.

Case 23.—Was sent for in this case by Messrs. Powell and Goddard, who informed me the placenta had originally presented, and had been entirely removed; no hemorrhage followed its extraction. The arm presented, and the child was so firmly impacted in the pelvis, that I found it impossible to turn; embryotomy was therefore performed, and the child with difficulty removed. There was no satisfactory rally, and the poor creature died at the end of the week with a fever of the low type. I know not whether the presentation was partial or complete.

Case 24.—Mr. Doughty requested my assistance in this case in the early stage of the labour, before serious exhaustion came on; and the result was most satisfactory. His patient had been bleeding for some hours, and, although her countenance was pale and rather faltering, there were no symptoms of pressing danger. When I first saw her she was sitting by the fire: there were no pains, and she felt altogether so comfortable that we had some difficulty in persuading her to retire to her bed for the purpose of undergoing the necessary examination. This was at length effected, and the placenta felt encircling the os uteri; a small portion had been detached anteriorly, and through the aperture thus formed, the funis, which was still pulsating, had descended. The os uteri was considerably dilated; the un-

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[* Dr. Waller relates numerous cases, a few of which we subjoin.]

dilated portion rather firm; bleeding going on, but it was not excessive. Prior to turniug, I detached the placenta entirely from its connection with the uterus, for the purpose of ascertaining whether the hemorrhage would be thereby increased. I thought this a favourable opportunity of testing Dr. Simpson's plan, knowing that, if alarming symptoms came on, I had the labour under my own control. No hemorrhage followed this separation; the hand was carried onward, and the child extracted: although in a state of asphyxia, the ordinary means succeeded in restoring it. The mother had no bad symptoms, recovering as soon as she had been accustomed to after an ordinary confinement.

Case 27.—A case of partial presentation. The arm presenting; the uterus rigid; the os very partially open. There was considerable hemorrhage. As there was no possibility of turning when I first saw this patient, the placenta was detached, and dilatation waited for. No hemorrhage occurred, and in less than twelve hours afterwards turning was had recourse to, and a dead child extracted. The female recovered from the shock of labour, but died of muco-enteritis during the week, this probably induced by the loss of blood.

Case 28.—A case of complete placental presentation, with Mr. Hall. This was a very interesting case. I saw the patient in the evening of the day, and learned from her attendant that he had been suddenly called to her, in consequence of profuse hemorrhage; she was then just entering upon the ninth month of gestation, and had previously born children. The bleeding was considerably arrested, and she was recovering from a state of syncope. The vagina was full of clots; the os uteri rigid, and just beginning to dilate; the placenta attached over its entire circumference. Turning was here impracticable; I therefore introduced my forefinger into the uterus, and separated the placenta throughout its whole extent, without rupturing the membranes. After waiting half an hour to ascertain whether there would be any renewal of the flooding, and finding it had ceased, the female was left to her repose. At four o'clock on the following morning labour-pains commenced, when there was a very slight discharge of blood. On my visit at eleven the os was fully dilated; the waters had just escaped. On examination, the placenta was felt hanging down into the vagina, perfectly separated from the uterus; the feet presented. With a little assistance the child, which was dead, was speedily born, the after-birth immediately following. *Medical Times*, *Jan.* 15, 1848, *p.* 257.

[The general result is, that in the 33 cases of placental presentation seen by Dr. Waller, twenty-three only of the mothers permanently recovered. The fatal result arose, however, in some cases from previous and culpable neglect; in others, the patient sunk in a few days from diseases aggravated by loss of blood. Dr. Waller remarks:—

Making allowance, however, for the facts above mentioned, it must still be confessed that the maternal mortality bears a fearful ratio to the number of recoveries when treated by the common method; and, consequently, any proposal to remedy an apparent defect in the mode of proceeding in these alarming cases, especially when its object is to preserve the life of the mother, ought to be received with respect, and, if prcaticable, to be fairly subjected to the test of experiment, before an adverse opinion be pronounced. This leads me to the consideration of my first question:—Will the bleeding be arrested by the complete removal of the placenta from its connection with the utetus?

The interesting records furnished by Professor Simpson prove that in many cases this desirable object has been accomplished by the means proposed; nevertheless, in questions so purely practical as the present, so easily answered by personal experience as opportunities may offer, I hesitate to recommend to my pupils any novel plan of proceeding, until I can strengthen my recommendation by an appeal to facts witnessed by myself. What, then, has occurred in my own practice tending to elucidate this subject? It will be noticed that in several cases the placenta was detached before the birth of the child, and in every such instance the bleeding ceased not for a time only, but entirely. As the fœtus had long been dead in one case, and the placenta, when examined, showed no marks of recent maternal circulation, it is presumed that the vessels had been long closed, and, therefore, no inference can legitimately be drawn from it as bearing upon the point in question; but in another case the plan proposed by Dr. Simpson was exposed to as severe a test as its most determined opposers could desire; for in this instance the placenta was entirely detached from the uterus, without rupture of the membranes. for, at the least, fourteen hours before the birth of the child, the effect of this mode of proceeding being the entire suppression of the bleeding; this has been the uniform result in all the cases I have had an opportunity of observing; there has not been a mere temporary arrest, but a permanent stoppage of the flooding. Although it would be premature to draw a definitive conclusion from the limited number of cases which have as yet been recorded, yet I cannot help considering it highly probable that the first question will hereafter be affirmed, and it will be found that where flooding occurs in placental presentation, from a partial detachment of the organ, its complete separation will be followed by an entire cessation of the flow.

This fact, then, being allowed, is Dr. Simpson's explanation satisfactory, viz., that the blood proceeds entirely from the exposed orifice of the placental sinuses? After much reflection I cannot arrive at this conclusion; I do not think the hæmorrhage occurs entirely, or even principally, from these vessels, although there is no reason to doubt that blood will escape from them until they are closed by the formation of coagula around their gaping orifices, when such effusions will necessarily be prevented. It appears to me that the source of supply, "the long and slender utero-placental arteries," are insufficient to furnish the quantity of blood which so frequently bursts forth from the uterus, especially when it is remembered that such supply is partially cut off, in consequence of the placenta being already detached from its uterine connection, to a greater or less extent. Again, I cannot forget that many of the severe cases of uterine hæmorrhage which have occurred in my own practice have been to those in which the hæmorrhage has continued, and sometimes ended fatally, after the placenta has been expelled from the uterus, where there could consequently be no placental circulation at all; and in these cases, therefore, all the blood must flow from the uterine surface; and in the *post-mortem* examinations the patent orifices of the large veins of the uterus were obvious enough. My conviction is, that the sources from whence the blood issues in cases of placental presentation are twofold—partially from the placental caverns, but chiefly from the uterine sinuses; I apprehend that the torn arteries furnish a comparatively small quantity, certainly not sufficient to produce any alarming symptoms.

To what cause, then, is the cessation of hæmorrhage to be attributed? I feel no difficulty in answering this question, for, as there is but one condition necessary for the production of the bleeding, so there is but one condition necessary for its arrest; the former consisting in the separation of the natural connection existing between the uterus and placenta; the latter in contraction of the muscular fibres surrounding the bleeding vessels. The complete separation of the placenta in the cases above related, and in those published by Dr. Simpson, must have been followed by this contraction (for under no other circumstances could the flooding by any possibility have been arrested); and although it could not have been perfect, as the uterus still contained the fœtus in its interior, yet it was sufficient to put an end to the flow of blood. Further observations are required, in order that it may be ascertained whether the same result will be attained in every instance; I entertain, however, a confident anticipation that such will be the result, and that it may be as certainly expected as that hæmorrhage will cease after the evacuation of the liquor amnii, where it is of the accidental kind. Let it not, however, be supposed that I am inclined to discard the old operation, and to adhere to the new, in every instance of placental presentation.

I would rather regard the new plan as a valuable addition to our knowledge in the treatment of these formidable complications of labour, but by no means likely to supersede delivery by turning; and I entirely agree in opinion with most of my professional brethren, that the cause of the great mortality is justly attributable to injudicious delay, and that far more favourable results would be obtained by a more prompt and energetic method of proceeding; in other words, to use the language of an obstetric author, "To determine to deliver early is to determine that the patient shall not die."—("London Practice of Midwifery.")

At the same time it must be acknowledged, that circumstances may occur rendering version for a time impracticable, as in cases 7 and 17, where considerable delay was inevitable on account of the unyielding condition of the soft parts: for although, as a general rule, dilatation, or at any rate, dilatability usually speedily takes place where there is much hemorrhage, yet we meet in practice with many exceptions. Had I been aware that the placenta might be removed without compromising the safety of my patients, I should have been relieved of some hours of great anxiety, and much maternal hemorrhage would have been prevented. The plan was adopted in cases 23, 27, and 28, with the happiest effect, so far as regards the flooding. In Mr. Austin's case, (31,) much blood was lost during the process of dilatation; perhaps this also might have been arrested.

There is also another class of cases, in the management of which the greatest benefit may be calculated upon; and I would particularly direct the attention of the profession to it, because, in the majority of instances, these are the very cases to which the physician-accoucheur is most frequently called—where the flooding has been going on for a considerable time; and he finds, on his arrival, that his patient is in an alarming state of exhaustion, the bleeding still continuing. Every practitioner of experience knows that the sudden emptying of the womb, under these circumstances, is attended with considerable risk; nevertheless he could not be blamed for making the attempt. He would naturally reason thus:—"My patient is in a very unfavourable state for artificial delivery, but, as hemorrhage is still going on, the longer I delay the weaker she will become, and my chance of success be proportionally diminished." He consequently, turns the child, and in many instances the result is unfavorable. If, however, the safety of the proposed plan be established, if it should by repeated trials be proved that an entire separation of the placenta would at once put a stop to the hemorrhage—he would of course adopt this plan; and, by so doing, the immediate danger would be averted, the patient's strength might be recruited by the use of suitable nourishment, and in the further treatment of the case he would be guided by circumstances as they might arise.

I will merely add, in conclusion, that I wish not to be misunderstood. My experience does not warrant me in giving a decided opinion that the proposed plan will succeed in all cases; but I have seen enough to induce me to give it a trial, assuming that in the present state of our knowledge it has been attended with no increase of the dangerous symptoms, but, on the contrary has been followed by their entire removal; and believing that, in certain cases, the adoption of the new method will be found to be practicable, at a ime when recourse could not safely be had to the usual operation of turning.

Med. Times, Jan. 29, 1848, *p.* 291.

[Mr. Ray, of Dulwich, publishes the following cases, in which the placenta was either expelled or removed from the uterus, when the patients were exhausted by the loss of blood and were still bleeding, with the effect of causing an immediate cessation of the hæmorrhage and a favourable termination of the case. The first patient was suddenly attacked with hæmorrhage in the seventh month, and when visited was in an extreme state of exhaustion.

On examination the os uteri was found dilated, and the placenta bulging through it; anteriorly the distended membranes could be reached, and a foot detected; the membranes were then ruptured, and the foot brought down. Hæmorrhage continued; slight uterine pains occurred; pressure was applied over the uterus, *which was firm*, and the child, a female, delivered still-born. On examination another fœtus was detected; the hæmorrhage continued, and the placenta occupied the same position; with some difficulty I reached and ruptured the second bag of membranes; and with the gush of liquor amnii the placental mass was expelled, which proved to be a double one, and remained connected by one cord to the child unborn. The hæmorrhage now (half-past five,) ceased, and although uterine pains did not reccur for two hours at least, and the delivery of the second (a still-born female,) was not completed until after half-past eight, *there was no return of it.*

[The other patient was in the last month of pregnancy, and had also lost an immense quantity of blood.]

On examination blood was was found oozing from the vagina, which was filled with coagulum. *The os uteri was fairly open and dilatable:* within it, and completely surrounding it, was found the placenta. No sensation of fluid within the uterus could be detected, and the firm head of a fœtus could be distinctly felt through the placenta. The *uterus* through the abdominal parietes was *found firm and globular, and remained steadily so, without any evidence of uterine pains:* no fœtal movement could be detected, and having no stethoscope with me, the position and state of my patient prevented my endeavouring to ascertain the existence or non-existence of the child. Without altering the position of my patient, I determined upon immediately removing the placenta, which I found attached to the anterior part of the neck of the uterus, the posterior and larger portion of the placenta being already detached, and separated from the uterus by coagulum. The separation was readily effected by passing the left hand between the uterus and placenta posteriorly, then gradually rotating the hand to the right, keeping the dorsal surface of the fingers firmly pressing against the uterus, and the margin of the placenta within their palmar surface, so that it was readily removed after its detachment by bending the fingers and withdrawing th e hand.

Some portion of the membranes being fixed between the head and pubes yielded during extraction, and remained behind. Hæmorrhage continued during the removal of the placenta, but ceased with its removal at 5 a.m., and no coagula formed afterwards in the vagina. The placenta was entire, of usual size; coagula were adhering to a considerable portion of its maternal surface, and its structure was to all appearance healthy. The cord was not tied nor divided until some half hour after the removal. I could distinguish no pulsation in it, but found the umbilical vein enormously distended.

The poor woman was now warmer; somewhat conscious; pulse more perceptible, though very feeble,—rapid, and not to be accurately counted; free from pain and hæmorrhage. The *uterus continued firm and globular;* and, upon examination, a very firm fœtal head was found resting upon the open os uteri in the natural position. The abdomen (which had until now been supported by hands), was encircled by a broad bandage; and as the patient dosed at intervals, the brandy and gruel was only occasionally given, and in smaller quantities.

About half-past 7, slight uterine pains commenced, and gradually increased; the temperature of the patient was good; the strength of the circulation had improved, and the radial artery communicated the characteristic vibratory sensation of the hæmorrhagic pulse, the number of beats varying from 140 to 150 in the minute; no return of hæmorrhage.

At half-past 8 pains were frequent, but not strong enough to be effective;

the firm fœtal head remaining fixed in the brim of the pelvis, and resting on the dilated and dilatable os uteri. One drachm of powdered ergot was given in the form of infusion. and speedily increased the strength and frequency of the pains, but without affecting the position of the fœtal head. Shortly after 9 o'clock, not deeming it prudent to tax further my patient's powers of endurance, I opened the head with a strong pair of scissors, and, with very little aid in the way of traction, the head shortly passed into the cavity of the pelvis, and was expelled with a portion of the membranes *by the uterine efforts* about 20 minutes past 10—more than five hours after the removal of the placenta. There was no hæmorrhage after the labour; indeed after the removal of the placenta, the fingers were not rendered more sanguineous than usual by the examination (excepting, of course, the effect of opening the cranium), and the only napkin I kept applied was soiled, not soddened by the discharge. The child (a male) was dead, well-formed, of full size, and livid. *Provincial Medical and Surgical Journal, March* 8, 1848, *p.* 124.

[Mr. Meadows gives another case. The patient was thirty-three years old, in her third labour; had had hæmorrhages for the last two months, and was very much exhausted. Mr. Meadows says:]

I found the os uteri almost entirely dilated, relaxed, and yielding, with the placenta entirely adhering to its circumference. With little or no difficulty I succeeded in introducing the hand into the uterus, and in the course of about ten minutes or a quarter of an hour, I withdrew the placenta. The hæmorrhage immediately ceased. I then gave the patient a strong dose of ergot, and in half an hour the uterus began to act powerfully. After an hour's almost continued pain, the child was expelled, still-born, under head presentation. The patient, who is a weak and delicate person, continued almost in a state of syncope for several hours afterwards. She gradually recovered her strength, and is now quite convalescent, and able to attend to her domestic affairs. *Lancet, Jan.* 1, 1848, *p.* 27.

[Mr. Griffin, of Weymouth, gives a case as follows:—The patient after having had slight pains for about three hours, suddenly lost about a pint and a half of blood. Some hæmorrhage continued, and in about an hour afterwards when seen by Mr. Griffin, the patient was in a state of great prostration, and the placenta was found to present. Mr. G. says:]

The question immediately arose as to the best course to be pursued. Were we to separate the placenta, as advocated by Dr. Simpson, plug the vagina, or resort to the old plan of separating still farther the placenta and turn? As all pain had ceased, I thought the application of the plug would be the best, which was effected by immersing a silk handkerchief in cold water and firmly pushing it up the vagina; a second was required, the half of which was introduced before the passage was filled. All external hæmorrhage then ceased, absolute quiet was enjoined, cold fluids only allowed, and Tinct. opii. m. xl. given. The pains did not return for thirty-five hours, when her medical attendant was again summoned, who stated to me that in consequence of their frequency and strength he had removed the plug; no hæmorrhage ensued, nor did any recur. The head then descended, and on my seeing her about an hour after, it had just emerged from the vagina, followed in fifteen minutes by the body. The child had been dead some time, and was in a putrid state, in consequence of which the cuticle was detached from the scalp, and the brain in a fluid state, and altogether was so smooth and bag-like to the touch, that when first felt, I was informed, it conveyed the impression of the membranes being unruptured. The funis was shrunken and putrid: no blood escaped on its division. The uterine contractions were feeble, and as there was no disposition to throw off the placenta, ergot of rye was given, and repeated in a quarter of an hour, the uterus several times becoming flaccid and apparently dilating, to prevent which I grasped it externally with my hands.

Fortunately there was *hæmorrhage*. It was then determined to introduce the hand and extract the placenta, as traction by the funis was impossible

from its putrid state; the *placenta was found to be half detached*, and the remaining part was readily separated. The pulse at the birth of the child, was 160; but on the removal of the placenta, increased to 196, which with the general death-like appearance of the patient, made us very anxious. Gin, the only stimulant to be had, was freely administered, and in an hour the pulse subsided to 140. On examining the placenta, one edge of it, an inch and a half square, *was covered with coagulated blood, firmly adhering*, which I have no doubt was the part that had been detached from the os uteri. This woman died in fifteen days, apparently from irritative fever, of a typhoid character, produced probably from the absorption of putrid matter.
British Record, March 1, 1848, *p.* 108.

[Mr. Griffin proceeds:]

I see no difficulty in entering into Professor Simpson's views, that it is from the placenta the hæmorrhage takes place, the uterine extremities of the arteries contracting, do not bleed to any extent—that is, when the uterus is not in a passive state—but the placental extremities of the veins remain with open mouths, there being no contractile power in them; and if Dr. Reid's view of their anatomy be correct, we need not be surprised at the loss of blood: he says, "when the blood of the mother flows into the placenta through the curling arteries of the uterus, it passes into a *large sac* formed by the inner coat of the vascular system of the mother, which is intersected in many thousand different directions by the placental tufts projecting into it like fringes, and pushing its thin wall before them in the form of sheaths, which closely envelope both the trunk and each individual branch composing these tufts. From this sac the maternal blood is returned by the utero-placental veins, without having been extravasated, or without having left her own system of vessels.

Into this sac in the placenta, containing the blood of the mother, the tufts of the placenta hang like the branchial vessels of certain aquatic animals, to which they have a marked analogy. This sac is protected and strengthened on the fœtal surface of the placenta by the chorion; on the uterine surface by the decidua vera; and on the edges or margins by the decidua reflexa." Weber states that "the inner coat of the venous system of the mother is prolonged into the placenta;" he describes it as "ramifying in the intervals of the placental tufts, in the form of large venous sinuses, upon the walls of which, the placental tufts are not only ramified, but also project into their interior, carrying the walls of the sinuses before them." Wagner describes the utero-placental blood vessels as "winding in an expanded net work round the tufts of the chorion containing the vessels of the embryo, and this net work is formed of peculiar, but very delicate tubes of large calibre, especially in the case of the veins." From these "sacs, sinuses, or tubes of large calibre" there is at each uterine contraction, in partial separation of the placenta, a gush of blood, and it is to be considered that this substance is almost as compressible as a sponge. That these sinuses communicate is proved by Mr. Bloxam, who says, "I have repeatedly injected the interstices of an entire placenta, from one or other of these orifices, and that it is closely compressed we know from the circumstance of the fœtal circulation being suspended; thus ergot acts so powerfully as to keep up an almost continued uterine contraction, which, if prolonged to any great extent, almost invariably causes the death of the infant." This gush of blood could not take place from the uterus, as there is no reservoir for it, excepting the sinuses; and that these are closed when the uterus contracts, is proved by Mr. Bloxam, who at the time he wrote, believed the hæmorrhage to be uterine; he says, "I cannot conclude this paper without a brief observation on the mechanical arrangement of the uterine orifices for the prevention of hæmorrhage. In regarding the immense size of the apertures of the venous sinuses, one feels a degree of astonishment that hæmorrhage is not more frequent and more fatal; but when it is remembered that the essential property of the uterine fibre at the time of gestation is that of contractability, and that by the exercise of this property the orifices of the deeper sinuses must be closed by the more internal layer of muscular fibres, inasmuch as these apertures are not placed on the same meridian, our surprise ceases. It is probable that, independently of this mechanical arrangement, the flow of blood from the more superficial openings may be arrested by the formation of coagula, a process for which the flocculent structure of the decidua seems highly favourable." Supposing that I am right in adopting this theory, then the almost entire cessation of hæmorrhage on the separation of the placenta is entirely accounted for, as the supply of blood is entirely cut off. I say almost entire, because I believe that it does not invariably cease; which I imagine arises from the uterus itself not contracting sufficiently to close the curling arteries, and, in fact, being in that state which we perceive when flooding takes place after delivery; I am of opinion that the hæmorrhage then comes from the uterine extremities of the curling arteries, and not from the sinuses, as the blood continues to flow in an even manner, and not in gushes. On looking at the subject in a practical point of view, I think it must be evident that we may safely detach the placenta, when the uterus continues to act; but when that organ is passive, great danger must attend separation, as the uterus will be in the same state as if it did not contract after delivery, and much blood be lost from the curling arteries, and the woman's life endangered.

British Record, April 1, 1848, *p.* 133.

[Referring to cases in which copious and repeated hæmorrhages occur during the eighth or ninth month of pregnancy, and yet signs of labour do not appear, Dr. Reid says :]

A practice I have of late followed in such cases is to evacuate the liquor amnii, pass a conically-shaped plug into the os uteri, filling up the vagina behind it, and then to exhibit one or more doses of secale cornutum internally. The good effect of this practice, in the few cases in which I have tried it, will induce me to employ it also for the future. It does not altogether stop the hæmorrhage, of course, but it keeps it for a time within the uterus, where it forms a large coagulum, the presence of which, combined with the irritation caused by the plug, excites uterine contraction, (at this time so anxiously desired.) The os uteri becomes soon much more dilated by the expulsion of the clot, and we are then enabled to introduce the hand and turn the fœtus with more facility; or in some instances the latter, together with the placenta, are speedily expelled. An illustration of this fact will be found in the following case:—On Jan. 28th, I was requested to see a case, with Messrs. Beaman and Wakefield. The lady was advanced to the eighth month of pregnancy, this being her ninth child born within ten years. She had been seized, during the evening, suddenly with flooding, and, from the effect produced on the system, she must have lost much blood, but there was no uterine contraction. The os uteri just admitted the end of the finger, and the head of the fœtus could be felt high up, with a loose flap of the placenta at the posterior part. As the flooding continued, it was determined, at seven P.M., to evacuate the liquor amnii, which was effected by the long trocar generally employed for that purpose, and the plug was inserted in the way described. One drachm of ergot was to be administered likewise. Mr. Beaman, whose patient the lady was, remained in charge of the case, and at half-past nine requested that I should again see it with him, as the hæmorrhage had slightly returned. Mr. Beaman, on making an examination, had found the plug thrust down, with large clots in the vagina, and a considerable re-collection of liquor amnii in a bag of membranes, which were again ruptured. The ergot had been given, and on examining per vaginam, the os uteri was somewhat dilated, with the vertex close to it. In making this last examination I attempted to dilate the aperture, and a labor-pain immediately came on. Four or five more followed in rapid succession, when a fœtus, about seven and a half months advanced, which had evidently been dead for a day or two, was expelled, and the placenta was extracted by Mr. Beaman immediately after. No hæmorrhage recurred, and the lady, although much exhausted by the previous loss of blood, recovered very favorably. The whole labor I should think did not occupy more than half an hour. The same means I have applied with equal advantage in cases of severe floodings occurring during threatening abortion, or to bring on premature labor in more advanced cases, when the patient was placed in danger by the continuance of an alarming hæmorrhage.

Lancet, March 18, 1848, *p.* 313.

[With reference to the practice of detaching the placenta and leaving the case to nature, Mr. Newnham, of Farnham, says that the objections to it are,]

That in the most formidable cases of uterine hæmorrhage, it is inapplicable, viz.—in those occurring about the sixth or seventh month, when the neck of the uterus is undeveloped, and when the placenta cannot be detached, without a degree of violence and internal injury altogether unwarrantable That in the ordinary cases, it requires as much time, and as much violence to the uterus to detach the placenta thoroughly, as it does for a well informed accoucheur to pass his hand—rupture the membranes—turn the child and bring down the feet, when the hæmorrhage usually greatly abates.

That if the placenta be detached, and the case be now left to nature, it may be *even some days* before uterine pain is established; and although there may be no hæmorrhage, yet the patient suffers great risk from the irritation and decomposition of the placental mass,—while the practitioner, his patient, and her friends, are all kept in a state of intense anxiety. That the life of the fœtus is inevitably lost, except in some exceptional cases, and these so few as not to be worthy of being taken into the calculation.

That the loss of maternal life is not diminished,—for although the depressing consequences of hæmorrhage may be lessened, yet the irritation of the nervous system is so proportionally increased, that the actual loss of life is not diminished. That the indulgence thus afforded to vicious indolence and inattention, is an element of the most serious importance in our estimate of the new practice. Every one can very easily detach a placenta, and relieve himself from the responsibility of the case, by casting all the rest upon the resources of nature; and leaving the fatal event to be scored up to her deficient resources. But every one is not possessed of those physical and mental qualifications, which would give him the self-possession of conscious power adequate to the occasion, or the firmness which would insure steadiness of purpose and of action under the most trying circumstances. For all those, therefore, who do not feel themselves equal to the management of placenta prævia, it would be a matter of no small moment, if they could exonerate themselves from the burden of action, and stand by in the (guilty) attitude of expectation.

Another objection to the proposed plan, will be found in the existence of cross-presentations, which it is obvious *must* be left to themselves—*must* become exceedingly difficult of management if the waters have escaped—and if not, would be rendered less easy and successful from the degree of decomposition which would have taken place. There may be cases of distorted pelvis, in which this mode of treatment may be valuable; but how very few are such cases: and in the only other case to which it can be supposed to be applicable, it has been shown that the irritation of the undeveloped neck of the uterus, might be fearful in its consequences.

In the management of the placenta prævia, apart from the ordinary treatment of hæmorrhage which will yet come to be considered, the first thing to be ascertained when called to such a possible case, is the cause of the hæmorrhage; and this cannot usually be obtained without introducing the *whole hand* into the vagina for the purpose of inquiring, first—whether the cause of the hæmorrhage be placenta prævia or not; and if so, whether it be centrically attached over the os uteri, or only partially so; and, secondly—the period of pregnancy; the degree of development of the neck of the womb; and whether the os uteri be thick and rigid, or thin, soft, and easily dilatable. In conducting this examination, the patient must be previously informed of its necessity, and care must be taken not rudely to displace the coagula which may have formed upon, and stopped the mouths of, the bleeding vessels; nor to tear up fresh vessels and to renew the bleeding—the great object being to obtain knowledge, but to keep the womb quiet and free from irritation.

Having ascertained that the placenta is not attached to the os uteri, or (in other words that the hæmorrhage is accidental,) if the neck be undeveloped, it is better to wait till the membranes may be easily ruptured—and then break them, and leave the remaining issue to nature.

In those cases in which the placenta is found to be centrically attached over the os uteri, but the neck is undeveloped and rigid, in our treatment, we must fall back upon general principles: we dare not interfere as yet, and must be contented with putting into practice the general plans of conduct to be presently noticed. Before the seventh month, should hæmorrhage occur, occasioned by placenta prævia, the neck of the womb will not be sufficiently developed, to admit either the separation of the placenta, or the introduction of the hand: both plans would be so extremely dangerous, that the hæmorrhage must be treated on general principles, and careful waiting must be enjoined, except that if life be threatened, there could be no valid objection against introducing a small trocar and canula through the placenta, so as to evacuate the liquor amnii, and bring on parturient pains. This might be done without risk of increasing hæmorrhage, and without the remotest injury to the mother; the child is not yet to be considered "*viable*." Still this is supposing a case which is very rarely to be met with, because hæmorrhage from placenta prævia does not usually occur, till the neck of the uterus is considerably developed—sometimes even not until the os uteri is beginning to dilate. There is, therefore, no certainty that the case is not one of placenta prævia, because hæmorrhage has only shown itself when pain has commenced. This hæmorrhage may or may not be important—and there is no certainty on the subject, no safety to the mother, no security to the practitioner, but in introducing the hand into the vagina, and becoming certain upon the subject.

Above all things, let the practitioner beware of leaving such a case to nature's agencies; or of waiting in the hope that some unseen, unknown good would arise from her conservative efforts. Nothing but danger results from delay; nothing but inevitable destruction from trusting the case to the chapter of accidents; whatever is done should be done promptly, steadily, energetically, but not rudely. Whenever there exists a suspicious hæmorrhage, its cause must be defined, and being ascertained to be placenta prævia, the membranes should be ruptured, the hand introduced, and the child turned and delivered; *provided always*, that the os uteri be sufficiently dilated, or *easily dilatable*. If neither of these states be present, we must wait, enjoin perfect rest, act upon general principles;—in a robust person, exhibit nauseating doses of antimony, or ipecacuanha, and wait till sufficient relaxation has taken place. *British Record, April* 1, 1848, *p.* 121.

[It is well known that Dr. Lee disagrees with Dr. Simpson and others on the nature and treatment of placental hæmorrhage. In the following abstract he brings forward the opinion of Guillemeau in support of his own views.]

"Before attempting anything," Guillemeau says, "two circumstances are to be attended to; the first is, to consider whether the placenta is little or far advanced; for if the former, having placed the mother in the proper position, it must be replaced and pushed back with the greatest diligence; and if the head presents, it must be brought down, that it may be expelled in natural labour. But if some difficulty should occur, so that the head could not advance, or that the mother or infant, or both, were feeble, and there was a probability of the labour being contracted, without doubt the best expedient is," he says, "to bring down the feet of the child, and deliver as gently as possible. It is highly probable that the practice here recommended, had been adopted in cases of partial placental presentation, to which alone it could be applicable—but the case cannot positively be determined.

"The other point to be observed is," says Guillemeau, "that if the afterbirth is much advanced, and cannot be replaced in consequence of its size and the hæmorrhage, and that the child is closely following it, and requires only to pass into the world, the placenta must be completely drawn forth." The practice here recommended could not have been employed usually by Guillemeau in cases of placental presentation, but only in those where the placenta had been spontaneously detached from the cervix of the uterus, and was partially expelled. The general rule laid down by him so clearly in the first sentence is, that when the placenta comes first, the most certain and expedient plan of treatment is, to deliver immediately by the operation of turning, a knowledge of which, he says, he obtained from Messrs. Pare and Hubert. It is here likewise stated that when the placenta comes first, and is separated from its attachment by uterine contractions, the blood flows from the openings in the veins, which are situated in the walls of the uterus, to which those of the placenta had been joined or united.

The circulation of the maternal blood through the placenta is here assumed to be established as an anatomical fact, although it was not then demonstrated, as far as we know. That this account of the source of the blood in cases of placental presentation given by Guillemeau is correct, has now been clearly proved. The structure of the placenta, and the manner in which the maternal blood passes through the decidual arteries into the cavernous structure, demonstrate that the torrents of blood which sometimes suddenly issue from the gravid uterus in the latter months, cannot possibly proceed from the veins of the placenta, the semilunar orifices of which are immediately closed when a solution of continuity takes place between the organs. The blood has never been seen to proceed from the placenta in unavoidable hemorrhage, nor has it, I believe, ever been witnessed in cases of inverted uterus, where the placenta has remained partially adherent.

In complete inversion of the uterus, the blood usually flows profusely from the lining membrane, and these vessels furnish likewise the blood in accidental uterine hemorrhage,—in flooding after the expulsion or removal of the placenta where the uterus does not contract,—in cases of hemorrhage where the uterus is distended with serous cysts, there being no placenta within the cavity from which the blood can flow,—in the early months of pregnancy, before the placenta is developed,—and in the unimpregnated uterus.

Dr. Chowne, in his elaborate and logical paper, has established, by evidence which it is impossible to overthrow, that the blood in all the varieties of uterine hemorrhage proceeds from the source above pointed out by Guillemeau. In the chapter above quoted, there is not a single observation to justify the assertion of Dr. Rigby, that Guillemeau evidently supposed that this presentation of the placenta at the os uteri was owing to its having been separated from its usual situation in the uterus, and fallen down to the lower part.

There is an expression employed by Guillemeau, which incontestably proves that he was fully aware that the placenta had not fallen down, but must have adhered by bloodvessels to the uterus:—"D'autant qu'ils s'ensuit ordinairement continuel flux de sang pour ce que les embouscheures des veines, qui sont situées aux parois de la matrice (esquelles celles de l'arrière-faix estoient joinctes) sont ouvertes." Guillemeau does not say that he actually felt the placenta adhering either partially or completely to the neck of the uterus, as Portal does, but he distinctly affirms that when the placenta comes first, the veins of the placenta are joined to those of the uterus, and that on a separation taking place, the blood escapes from the veins laid open in the lining membrane. It is impossible, therefore, to deny that Guillemeau was aware that the placenta originally adhered to the neck of the uterus, that its separation was the cause of the hemorrhage, and that the most certain and expeditious method of relieving women under such circumstances, was to pass up the hand into the uterus, turn the child, and deliver. All these important facts were ascertained towards the close of the sixteenth, or at the very commencement of the seventeenth century.

[Mauriceau also, Dr. Lee observes, recommends immediate delivery.]

Lancet, Nov. 20, 1847, p. 546.

134.—TWO CASES OF INTERNAL HEMORRHAGE.—By Dr. A. Tyler, Dublin.

[To the first case Dr. Tyler was called after a midwife had been in attendance for twenty-two hours. He found the os dilated, and the head presenting; and after two quarts of urine had been drawn from the distended bladder, the pains improved. As they again became weak, ergot was given, and a living child was born. Dr. Tyler proceeds to say,—]

The uterus contracting well, I allowed the midwife to apply the binder. A quarter of an hour after the birth of the child, I proceeded to examine if the placenta had descended; but not finding it in the vagina, I made up my mind to wait a little longer for its natural expulsion. However, fortunately before leaving the bedside, I placed my hand upon the uterus, which felt soft and enlarged, pressure being exerted, several clots of blood escaped externally; my patient now said she felt her head light. The binder was immediately removed, and cold water applied over the uterus by means of the hand, and also a wet towel, under which treatment the uterus contracting, expelled more clots. Thinking it high time to ascertain the condition of matters inside, I passed my hand up into the cavity of the uterus, the lower part of which was filled with coagula; following the cord as my guide, I pushed my hand through the coagula, until it was grasped by a constriction of the upper part of the uterus, through which a portion of the placenta could be felt protruding, the mass of it being above; by working the fingers up and down, I was enabled, without forcing the constricted part, to bring down the entire placenta, but torn considerably. A tendency to hemorrnage still continued, which was only overcome by repeated cold applications, and friction over the uterus for the space of half an hour, the uterus all that time alternately relaxing, and again contracting under the influence of fresh cold applications. The window was thrown up, and the door of the room opened to admit a stream of fresh air; under this treatment and the administration of spirits diluted with cold water, the woman gradually rallied, and the hemorrhage ceased. The binder was again firmly applied: but I took the precaution of placing two pads under it, immediately above the fundus uteri, so as to prevent the possibility of that viscus again enlarging. My patient soon fell into a tranquil sleep.

[This patient recovered: the next case, which we quote entire, was a fatal one.]

Mrs. M., first pregnancy, aged thirty-five, was delivered of a living child, on the morning of the 21st of December, 1842. The labour was tedious. Dr. D., the gentleman who attended her, being fatigued after sitting up with his patient all the previous night, ventured to leave her for half an hour, without previously removing the placenta. On returning to her at eight a.m., the placenta was still retained, and the patient's state so alarming, that he at once requested the assistance of a neighbouring practitioner, Dr. H.; who on his arrival at the house, found the poor woman almost pulseless. He administered spirits freely; but was afraid in the then exhausted state of the patient, to attempt the extraction of the placenta;

he, therefore, sent a message for me to come and take charge of the case, and with directions to administer the ergot of rye. When I saw her first, at ten a.m., three hours subsequent to the birth of the child, she was struggling against the attendants, attempting to get out of bed, and calling for a drink of cold water. I had no opportunity of administering the secale, or indeed attempting any treatment for her relief, as after a few struggles she gradually sunk exhausted, and expired.

In order to ascertain positively the nature of the case, I introduced my hand into the cavity of the uterus, where I found the placenta loose and surrounded by an immense quantity of coagula; no blood had escaped externally, nor could I feel any pulse at the wrist when I first saw her. Comment upon this mismanaged and neglected case is unnecessary; however, it is my painful duty, to state my firm belief, in which all experienced practitioners must agree, that had the same watchfulness been adopted by the attendant, and a like active treatment pursued in the management of this case from the first, an equally favourable result might have been expected, as in that of Mrs. D.'s just detailed.

British Record, Feb. 1st, 1848, p. 50.

[illegible].—CASE OF VAGINA IMPERFORATE AT THE TIME OF LABOUR.—By Dr. J. OGDEN, Manchester.

[The patient, who had been married for ten years, was in labour with her first child. Her mother stated that when she was nineteen years old, she was treated for retention of the menses, and an incision made in the closed vagina: the opening, however, closed, and she afterwards menstruated regularly by the meatus urinarius. When Dr. Ogden was called to the case, he could find neither labia nymphæ, clitoris, nor vagina, nothing indeed but a flat, hard tumour, like the fœtal head. He says,—]

I immediately dispatched a messenger for my scalpels, and on receiving them, made an opening of considerable extent; as large as the rectum and meatus urinarius would admit of, without injury to the parts. I was greatly surprised to find the barrier, or intervening substance which I had to penetrate, fully an inch and a half in thickness. The membranes were unavoidably severed in the operation, and a considerable quantity of water was evacuated. In about an hour after the section had been completed, she gave birth to a still-born, moderately sized male child, during the expulsion of which, great care was required to prevent laceration, which caused much anxiety to avert. About two years after the accouchement, I was again called in, to attend her, at the full time of utero-gestation. I found the vagina thick and unyielding, and which would, with the greatest difficulty, allow of the admission of two fingers only; the os uteri fully dilated; pains severe, and recurring at short intervals. I waited six hours, in hopes of the vaginal contraction yielding a little; but eventually ascertaining the impossibility of it, I determined, as before, th assist the expulsion by opening the vagina with the scalpel. This I accomplished with the greatest care; first introducing a catheter into the bladder, as a guide to prevent injury to that organ, and then making use of my finger, per anum, in performing the section towards the rectum. In about an hour, at imminent risk of laceration, with the aid of the vectis, I succeeded in extracting a full grown, living female child.

After the birth of this her second child, I saw Mr. Grime, who had removed to Manchester, and elicited from him the following facts, regarding the operation, which he and Mr. Mc Maith had previously performed upon her. After expressing his surprise and astonishment at her being impregnated, he stated, that he, in consultation, attempted to open the vagina with a lancet, for retained menses; but finding the intervening substance so thick, was compelled to resort to the scalpel. After cutting to the depth of an inch and a half, they were much surprised by a gush of water, issuing from the wound, and on opening a little farther, they succeeded in evacuating a quantity of thick grumous blood, and agreed to introduce a canula to keep the opening pervious: this, however, was not retained long; and supposed the opening closed, but had not heard of her since. When I related the accounts of her different accouchements, he remarked, that the escape of water during the operation he performed, could never be accounted for, either by himself or his colleague; but that now he was quite convinced that the meatus urinarius, in the upper part of the vagina, must have been opened, and remained pervious; and through this she must have menstruated, and become impregnated. This also is my opinion, as it could not have occurred in any other manner.

I have consumed much time in searching the works of ancient and modern writers for records of similar cases, but without avail, and have also particularly inquired of my medical friends if they were cognizant of such cases occurring, or remembered having met with them in their various readings; but with a similar result. I have not succeeded in obtaining any proof that the like ever before occurred, or has been recorded in any book. *British Record, Jan. 1, 1848, p. 34.*

136.—ON RIGIDITY OF THE OS UTERI.—By Mr. Remington, and others.

[At a Meeting of the South London Medical Society, Mr. Remington related the case of a woman æt. twenty-nine, whom he had attended in her first labour. When he arrived, the liquor amnii had escaped, and there were frequent though feeble pains.]

On a vaginal examination, the os was found scarcely open, the head presenting, but high up, and there was considerable pelvic deformity, the pelvis itself being small; the brim contracted antero-posteriorly by the jutting forwards of the sacral promontory; the linea ilio-pectinea sharp; the sacrum much curved; the coccyx turned forwards, and unyielding; the outlet narrowed antero-posteriorly by the projecting coccyx; the arch of the pubis was also diminished. There was little change in the patient's state throughout the day, or on the following morning. There being no constitutional disturbance, and no further dilatation of the os, it was determined to give a fair trial to the natural efforts.

[Next morning, there being little change in the condition of the patient, *emetic tartar* was given in doses of a quarter of a grain every four hours, with the effect, in about twenty-four hours, of slightly dilating the os uteri; but in the evening of this, the third day, the strength began to fail.]

Labour having now been protracted two days and a half, it was agreed to deliver her, and the bladder having been emptied, and the woman placed in the usual position, Dr. Lever made two slight incisions with a knife in the os uteri to relieve the tension, and then proceeded to perforate the head; the child was extracted without more than the ordinary effort on the part of the operator; and the placenta being removed, a dose of ergot was given to insure contraction, and the patient progressed favourably to convalescence. The author concluded by drawing attention to the healthy condition of the patient, as conducing to so favourable a termination of the case, as previous disease of the peritoneum or pelvic viscera would have diminished the chances of recovery. He adverted to the propriety of performing an operation, where such is necessary, before much constitutional irritation is set up, and considered the course and terminaiion of the case narrated in no way invalidated the important rule, "to give a fair trial to the natural efforts even in cases of pelvic deformity."

[In the discussion which followed, Dr. Murphy objected to the use of tartar emetic, and thought mechanical dilatation by the fingers admissible.

Mr. Waterworth advocated the use of venesection, with small and frequent doses of antimony.]

Dr. Lever viewed tartar emetic almost as a specific in relaxing a rigid state of the os. In his experience no remedy could be compared to it, especially when followed by a dose of opium. The feeble state of pulse, in the case related, negatived venesection, and, as a general rule, he did not think its use to be as highly recommended as that of antimony, being apt to leave an inert and ill-contracted state of womb, and more tardy convalescence. The necessity of instrumental aid, in the above case, was thought of from the first, and he highly approved of its use not being deferred until those symptoms of exhaustion mentioned by many authors should appear, as in such cases patients rarely would recover the shock of the delivery, and he viewed the successful termination of the present case as attributable to the well-timed interference.

Medical Gazette, Nov. 19, 1847, *p.* 902.

[Mr. Barrett, of Bath, relates the following case:—]

The patient was in her fortieth year, and in labour with her first child. I saw her first on Wednesday morning, June 1st; labour had commenced on the day previously; the pains were slight, but pretty urgent; the os uteri, just sufficiently dilated to admit the tip of the finger, was very high up, directed backwards, very rigid, and thick. On Thursday, I found the pains more severe, but the condition of the os unchanged; the liquor amnii had been discharged, and the head presented; the skin was cool, and pulse quiet. A dose of castor oil, with fifty drops of tincture of opium, was given; free action of the bowels, but no sleep followed. The next twenty hours produced little change in the symptoms; the pains were more severe, but the state of the os uteri was unchanged; it still would but admit the point of the finger through its thick and almost cartilaginous ring; the head pressed firmly on the anterior part of the cervix; the pulse was full and sharp; she had not slept for forty-eight hours. I bled her to twelve ounces, gave her a grain and a half of opium, and administered an enema. She slept a few hours after the bleeding. Early on Saturday morning the pains returned very powerfully; the os uteri had lost a little of its thickness, but none of its hardness; it was still tilted high up against the promontory of the sacrum, but was dilated to about the size of a shilling piece. The woman had had anasarca of the lower extremities to a great extent for six or eight of the latter weeks of pregnancy, and the labia and external parts in general were very œdematous; the vagina was hot and dry. I again bled her, the blood being buffed and cupped; gave another injection of castor oil and turpentine, which freely emptied the bowels, and directed constant steaming with hot water to the pudenda. Violent pains continued throughout the day: the condition of the os remained unchanged; but the head was lower down at each pain, the cervix being forcibly stretched over it.

At this period my friend, Dr. Samuel Edwards, saw her with me; there was some tenderness of the abdomen; skin was hot; pulse sharp and full, and about 100. At his suggestion she was again bled, and put under complete nauseation with tartar emetic; afterwards a full dose of opium, and another emollient enema were given; the os uteri and cervix were freely smeared with extract of belladonna. The pulse fell to 90; the pains became suspended for many hours, during which time she occasionally slept, and felt comfortable and easy.

On Monday morning, June 6th, the pains (forcibly expulsory) again recurred. An examination, however, shewed no other change in the state of the os uteri, than that it was a little thinner; it was not more dilated, and still felt almost like a bony ring, and resisted, as it had all along done, any attempt at artificial dilatation. Towards night considerable constitutional disturbance set in; the pulse was 110; skin dry and hot; tongue rather brown; the abdomen tender; vagina hot and dry; and the system generally irritable.

It must be admitted that the state of the patient at this time was one calculated to excite considerable anxiety. She had been in labour for five days, but the state of the os uteri opposed completely, as it did, in the first day of the labour, the possibility of the birth of the child. The usual remedies sedulously applied, and anxiously watched, had exercised no influence in overcoming the difficulty; and though till this time, the constitutional symptoms had caused no uneasiness, still now they began to show themselves in such a form as to urge the necessity of the adoption of some measure by which the labor might be terminated; the pains, too, were violent and forcing, and the head was so forcibly pressed against the thin and widely stretched cervix, that I dreaded with each pain, some feaiful laceration. At this time the child was living; but even had it been dead, to have practiced embryotomy through such an undilated and undilatable os uteri, would have been as difficult to the operatior as dangerous to the mother.

It was in this state that Dr. Edwards proposed an incision of the edge of the os uteri, and though my own experience taught me nothing of the practice, my confidence in his judgment removed any doubts I may have entertained of its desirableness. The operation was performed in the manner detailed by Dr. Lever, in a similar case published by him. The knife used was a probe-pointed bistoury, and the two incisions were made each on side the mouth of the womb. The patient complained of no pain; some bleeding followed the division. In two hours the constitutional symptoms were materially relieved; the pulse was at 90, and the skin cool; abdomen less tender, and irritability calmed.

An examination four hours after the operation showed but little change in the state of the os, but after a time it began slowly but certainly to dilate, and at eleven o'clock in the forenoon of Tuesday (the seventh day of labour), its disc was rather larger than half-a-crown. The corrugated state of the scalp, the disappearance of the caput succedaneum, and the still more conclusive evidence afforded by the stethoscope, showed the death of the child, and we determined upon performing craniotomy. The os continued gradually to yield to the diminished bulk of the head, which each pain forced against it, and the remainder of the labour went on steadily progressing, the pains continuing regular and the patient comfortable, till 11 o'clock p.m., when she gave birth to a female child of the average size. The placenta was expelled in about twenty minutes. No one single unfavourable symptom following to interfere with her speedy and perfect recovery.

Provincial Medical and Surgical Journal, Dec. 15, 1847, *p.* 684.

137.—ON TURNING AS AN ALTERNATIVE FOR CRANIOTOMY AND THE LONG FORCEPS, IN DEFORMITY OF THE BRIM OF THE PELVIS.—By Prof. SIMPSON, F.R.S.E.

[In Retrospect, Part XV., p. 325, the reader will find an interesting paper by Dr. Simpson on this subject. We there reprinted it from the Monthly Journal, in order to show the effects of ether, rather than to elucidate what Dr. Simpson wishes in the subjoined paper to impress upon us, viz.,—the possibility of turning the child in cases of contracted pelvis, instead of performing embryotomy. The case in which this practice was first adopted by Dr. Simpson, was that of a woman, who, in her first labour, had been delivered by means of craniotomy. At the full period of her second pregnancy, labour-pains came on, and in a few hours Dr. S. was sent for, the os uteri being then tolerably well dilated, the membranes entire, and the head above the brim. He says—]

During the course of the few following hours, no advance being made, I proceeded shortly after nine in the evening, (the labour had commenced in the forenoon,) to make the mother inhale the vapour of sulphuric ether, and to extract the child, as I had previously determined to do, by the operation of turning. The os uteri was so dilated, as not to offer any impediment to the introduction of the hand; the head was pushed aside, and a knee seized with great ease. With this hold the infant was readily turned, and its extremities and trunk drawn down, but the extraction of the head through the distorted brim was a more difficult task. After the arms were brought down, very great exertion in the direction of the axis of the brim was required before the head was extracted; still not above two or three minutes elapsed from the first introduction of the hand till the complete extraction of the infant. It gasped several times after it was born, but full respiration could not be established. Its head was compressed laterally, the left parietal region flattened, and the anterior part of the right parietal bone deeply indented by the pressure to which it had been subjected against the projecting promontory of the sacrum. The transverse or bitemporal diameter of the head at the seat of the indentation, was found, on careful admeasurement, and when held compressed by the fingers, not to be above two and a half inches. Hence the conjugate diameter of the brim did not, in any probability, exceed this. The infant, a female, was large, and above the usual size; it weighed exactly eight pounds, the average weight of the female infant at birth being about six pounds and three-quarters. In consequence of being placed under the complete anæsthetic influence of the inhalation of sulphuric ether before the operation was begun, the mother was quite unconscious of pain or suffering during the whole process of the turning and extraction of the infant. She made a recovery that was uninterruptedly good and rapid, and left her bed, dressed, and walked into the next room, on the fourth day after delivery.

The preceding case was, at the time of its occurrence, one of intense interest to me in two points of view. For *first*, it was the first case in which I or any other accoucheur had ever tried the effects of ether inhalation during labour, and so far it is, I believe, destined to form the commencement of a new and important epoch in obstetric practice. But *secondly*, the case appeared to me to be one of great moment as an apposite illustration of views which I have been previously led to entertain, as to the possibility and propriety of substituting, in some instances, extraction by the feet for extraction by the crotchet—the delivery of the infant by the hand of the accoucheur instead of its delivery by instruments—the lateral compression of the child's head by the contracted sides of the pelvis, instead of its more dangerous oblique or longitudinal compression by the long forceps,—and, *above all, the transient and* (*not necessarily fatal, depression of the flexible skull of the fœtus, for the*) *destructive and necessarily deadly perforation of it.*

It is in this second or latter point of view that I propose to consider the preceding and other analogous cases in the present memoir.

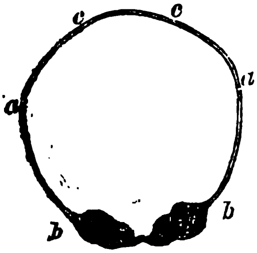
In directing the attention of the Obstetric Society in January last, to the case which I stated above, and its relations to the question of turning, I took occasion to state that I had practised the same operation as an alternative for craniotomy and the long forceps, in other instances in which the head had been morbidly detained at the brim, from the existence of disproportion between the two: and that I believed it to present the following advantages over embryulcio:—It gave the child a chance of life; it was more safe to the mother, because it could be performed earlier in labour and more speedily; it enabled us to adjust and extract the head of the child through the imperfect pelvic brim in the most advantageous form and direction, the head flattening laterally under the traction; the neck (if the child were living or only lately dead.) was so strong as to allow us to exert such a degree of traction upon the obstructed head, that the sides of the cranium might become very greatly compressed, or even indented under it, and that without necessarily destroying the child; and lastly, it was a practice which could be followed when proper instruments were not at hand, and the avoidance of instruments was generally desirable, when it was possible.

Provincial Medical and Surgical Journal, Dec. 15, 1847, p. 673.

[Dr. Simpson states that this practice had been suggested to him by studying recorded cases of labour with concentrated pelves, when he had been struck with the fact, that when the child presented preternaturally and ultimately passed with the feet first, the labour seemed both easier and safer both to mother and child, than when in the same patients the head presented. Upon what, therefore, he asks, "does this greater facility and safety of footling, as compared with head-presentation, in such cases depend?" It depends upon certain points in the configuration of the child, into which accordingly Dr. Simpson enters at length. He says,—]

The form of the infant at birth, has often and justly been compared to that of a cone; the feet serving as the apex, and the arch or biparietal diameter of the head forming the basis of the cone, and there being a gradual tapering and increase of size from the former to the latter point. Consequently, when in cephalic presentations, the head or broad end of the cone once dilates and passes a given point, the narrow remainder of the cone, viz., the trunk and extremities, afterwards pass it without impediment. In fact, both in cranial and in footling presentations,—even in instances of contracted pelvis,—the transit of the body is usually attended with no special difficulty or delay. The obstruction is referrible to the child's head alone; and hence the necessity of accurately studying the obstetric configuration and relations of the fœtal head, in order to be able to overcome the obstruction offered by this part.

FIG. 1.—Vertical section of a fœtal skull, showing its conical form.



Now, besides that the whole infant is, as I have just stated, of a conical figure, the head taken alone, presents more imperfectly the same configuration; for the basis of the skull is considerably narrower than the arch; or, in other words, its bimastoid diameter, in less than its biparietal diameter, so that the cranium increases gradually in breadth and size, like the whole body, from below upwards.

The biparietal diameter of the head (or vertex) is, in this way, the *basis* both of the cone of the whole body and of the cone of the head taken singly.

[The bimastoid is less than the biparietal diameter, from half to three quarters of an inch, the former averaging about two inches and three quarters, the latter three inches and a quarter, or three inches and a half. As then the cranium at its arch, or biparietal diameter, is loose and compressible, while at the base it is quite incompressible, we may gain, Dr. Simpson thinks, the difference of half or three quarters of an inch above spoken of, by varying the method of extraction. He says,—]

Now, when the brim of the pelvis is morbidly contracted at one part,—let us imagine, for instance, its conjugate diameter to measure only three inches instead of four,—then the child, upon being forced down upon it as a head-presentation, meets with difficulties which, probably, no uterine effort could possibly surmount. A round body, the diameter of which is some lines above three inches, is attempted to be pushed through an opening measuring only three inches. But, turn the child, extract it footling, and let the head pass through the contracted brim by engaging in it, first the base or bimastoid diameter of the cranium, and the difficulty may possibly be overcome; for then we have the head entering the contracted brim of three inches as a body less in its diameter than three inches, and capable of having its broader upper portion flattened, and reduced to the size necessary for its complete transit, by the force which we can apply to the already protruded body of the infant, producing the requisite degree of lateral compression of the cranium against the opposed sides of the contracted pelvic brim.

Or, let us take another and perhaps simpler view of the subject. Suppose, for want of a better wood-cut, we take the letter A as a round cone simulating the figure of the infant, the apex of the letter corresponding to the feet of the infant, the base of it corresponding to the biparietal diameter of the head, and the cross-bar of the letter representing the incompressible floor or basis of the skull, and the two divergent feet of it representing the elastic and compressible arch of the cranium. Now, if we desired to pass this round cone A through an oblong aperture O, the diameter of which was somewhat less than the diameter of the basis of the cone, should we succeed best by pushing it through the oval opening with its basis foremost, or by dragging it through it with its apex foremost? If we extract the cone through the aperture by bringing its narrow end foremost—or, in other words, if we bring the child by the feet instead of the head,—then two objects are gained; for, first, we have the power of using any justifiable degree of force that may be required, by the command we thus obtain of the protruded and narrow end of the cone; and secondly, the elastic sides of the base of the cone situated above the cross-bar,—or, in other words, the sides of the cranium itself above its basis,—will yield and become compressed together to such an extent as to enable the collapsed body to pass through the supposed opening. If, on the other hand, we attempt to make the broad basis of the cone, (or the vertex of the head,) to pass first through an aperture less than its own diameters, then we are apt, the more we press, to increase rather than diminish the difficulty attendant upon its transit; for the more force we apply we are liable to render that part which is too broad still broader, by flattening it against the sides of the aperture, and making its limbs and parietes at one point or another diverge and widen, instead of converge and contract. It is true that if we can insinuate obliquely or otherwise, the basis of the compressible cone (or the arch of the head,) into the contracted aperture, so as to get its sides compressed between the sides of the opening, and consequently its biparietal diameter lessened by the force with which the body of the cone is pushed downwards, a similar object would be gained, but in a more uncertain and imperfect degree. Besides, there is always in this way the chance of making the two sides of the cranial arch, (2 2, *fig.* 2,) spur out, and diverge lower down at their basis, in proportion to the amount of force applied to the upper surface of the arch itself, (*c c*, *fig.* 2.) so that while we contract the sides of the arch above by the kind of pressure supplied to it, the direction of that pressure may possibly widen and open the limbs of the arch below, and so far increase, for the time being, the difficulty accompanying the transit of that part.

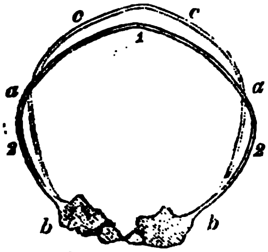


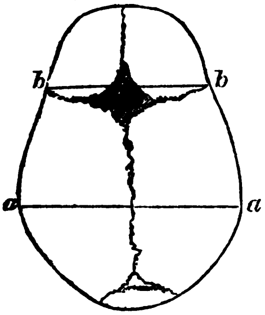
FIG. 2.—Illustrating the effect of pressure upon the top of the arch of the fœtal cranium, as happens when the head presents.

Description of fig. 2.—The dotted line *c b b c* is the vertical section of a normal fœtal skull, as seen in *Fig.* 1. The outline 1, 3, 2, shews the disadvantageous alteration in form produced by the presentation of the head to a contracted pelvis.

But this transverse or lateral form of flattening and compression of the cranium is very far indeed from being always obtained when the vertex is allowed to present at the brim of a distorted pelvis; for frequently the whole, or the greater mass at least, of the head remains obstinately above the brim, despite the action of the propelling efforts upon it of labor-pains, both dangerous in the amount of their duration, and dangerous in the amount of their force. By bringing, however, the apex of our cone, or the narrow diameters of the cranium foremost, we not only improve and simplify the mechanism of the labor by so far converting the entrance and passage of the child's head into the contracted pelvic brim, from a matter of comparative chance into a matter of comparative certainty; but further, we effect, thus, in the course of minutes by turning, what it might require the course of hours or days to accomplish, provided the transit of the fœtal head were left as a head-presentation to nature alone, or to nature assisted at last artificially by the long forceps or crotchet.

But other advantages are obtained by turning, as compared with embryulcia and the long forceps, in the class of cases which we are considering. We not only bring the tapering or cone-shaped fœtal head through the distorted brim, by making its narrow extremity enter first into the contracted aperture, and *afterwards* using the sides of that aperture to compress the elastic parietes of the broader and higher part of the cranium, but in some cases we in this way, I believe, eschew altogether engaging the broadest part of the head (*a a*, *fig*. 3,) in the narrowest part of the contracted pelvic opening,—a circumstance and adjustment that, in a head-presentation, would be otherwise quite unavoidable. For besides being found of a conical form when looked at vertically, the infantile head shews the same configuration also when viewed antero-posteriorly.

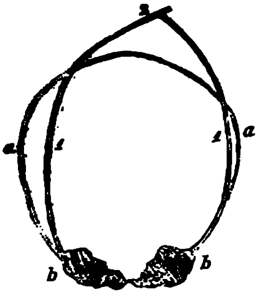
Fig. III.—Outline of the fœtal head as seen from above.—(From Chailly.)



The accompanying outline, for instance, of the fœtal head, as seen from above, is an exact copy of that given in Chailly's late work on Midwifery, and shews that while the head is very broad behind in its biparietal diameter, (*a a*, *fig*. 3,) it gradually tapers and dimishes in breadth as we proceed forward to its bitemporal and bifrontal, (*b b*, *fig*. 3,) diameters; and its bitemporal diameter is in general fully half an inch less than its biparietal. But, in the mechanism of head cases, the neck, as is well known, becomes early flexed in the labour, so that the chin is brought towards the top of the sternum, and the vertex or upper and back portion of the head first becomes pushed downwards into the pelvic aperture, and thus constitutes the presenting part,—in other words, the broadest part of the cone of the whole child, because the broadest part of the head, or its biparietal diameter, is thus naturally first driven downwards into the pelvic cavity, and is first directed against the contracted brim. The same head, when extracted as a footling presentation through the same distorted pelvis, will in some instances entirely escape, having this, its broadest part, placed and engaged in the narrowest part of the pelvic aperture; for, as the extremities and the body of the child are gradually extracted in the operation of turning, the head, in ultimately adapting itself to the shape of the pelvis, comes to have its bitemporal, and not its biparietal, diameter implicated in the narrowest or conjugate diameter, the parietal protuberances passing into the wider lateral space opposite the sacro-iliac synchondrosis.

In order that the full-sized fœtal head may pass through a contracted pelvic brim we require to have the head flattened laterally, and its sides at its anterior parietal or temporal region collapsed and compressed. The outline *a b b a*, *fig*. 4, is the outline of the vertical section of the infant's skull that I have already given in *fig*. 1. The line 1, 2, 1, *fig*. 4, marks what we may presume, for the sake of illustration, to be the shape and degree of compression to which the head would be required to be reduced in order to pass the contracted pelvic aperture.

Fig. 4.—Illustrating the effect of lateral compression upon the sides of the arch of the fœtal cranium, as happens when the child is extracted footling.



Description of Fig. 4.—The dotted line *a b b a*, is the vertical section of a normal fœtal skull, as seen in *fig.* 1. The outline 1, 2, 1, shews the advantageous alteration in form produced upon the fœtal cranium by extracting the child footling through a contracted pelvis.

Would this necessary degree of compression be effected more easily and by less amount of force if the head were drawn through the narrow pelvis as a footling presentation, than if it were driven into it as a cephalic presentation? I certainly believe that less power would be required to produce the same degree of lateral compression and collapse in the cranial arch, provided the compressing force was applied, (as in cases in which the child is extracted footling,) directly to the two sides or lateral surfaces (1, 1, *fig.* 4.) of the arch itself, than under the alternative condition supposed. For if the child descended into the pelvic brim as a head-presentation, the uterine contractions would drive it against the narrow points of the pelvic brim, so that the reacting compressing power of these points would be applied either to the two upper surfaces of the arch, (*c c*, *fig.* 2,) or partly to one of them, (*c*), and partly to one of its opposite lateral surfaces, (*a a*, *fig.* 4.) In such circumstances the compressing powers would be acting much more indirectly and far more at a disadvantage in effecting the required compression, than if they were applied, as in extracting the child footling, directly and immediately to the sides themselves, (*a a*, *fig.* 4,) that are to be compressed.

"Does the head, (asks Dr. Radford,) elongate more readily upwards than downwards? If only (he answers,) the same degree of extractile force is used, it does not." But what I have stated shews that the same degree of extractile force will produce the desired effect more easily, and as we shall afterwards see, more safely also, when the child passes with the pelvis, than when it passes with the head first. And this I believe, affords us another advantage in the mechanism of footling as compared with cephalic presentations in the instances of diminished pelvic brim. We are enabled to produce by it the same amount of compression of the fœtal head by a less expenditure of compressing force, for we apply it to the lateral surfaces or piers of the cranial arch, (*a a*, *fig.* 4,) and not to its pedentures or upper surfaces, (*c c*, *fig.* 2,) and we effect a saving of force by the *direction* in which we apply the force.

[The sum of these observations is as follows:—]

1. The fœtal cranium is of a conical form, enlarging from below upwards, and when the child passes as a footling presentation, the lower and narrower part of the cone-shaped head is generally quite small enough to enter and engage in the contracted pelvic brim.

2. The hold which we have of the protruded body of the child, after its extremities and trunk are born, gives us the power of employing so much extractive force and traction at the engaged fœtal head, as to make the elastic sides of the upper and broader portion of the cone (viz., the biparietal diameter of the cranium) become compressed, and, if necessary, indented, between the opposite parts of the contracted pelvic brim, to such a degree as to allow the transit of the entire volume of the head.

3. The head in being dragged downwards into the distorted pelvis, generally arranges itself, or may be artificially adjusted, so that its narrow bitemporal, instead of its broad biparietal, diameter, becomes engaged in the most contracted diameter of the pelvic brim.

4. The arch of the cranium or head is more readily compressed to the flattened form and size required for its passage through a contracted brim, by having the compressing power applied, as in footling presentations and extraction, directly to its sides or lateral surfaces, than by having it ap-

plied, as in cephalic presentations, partly to the lateral and partly to the upper surfaces of the arch.

Lastly, I may add, as a result of the whole mechanism, that the *duration* of the efforts and sufferings of the mother is greatly abridged by turning, when used as an alternative for craniotomy and the long forceps, and that thereby her chances of recovery and safety are increased. But as this is in itself a matter of the highest moment, in reference to the whole question of the proposed practice, we shall devote a special section to the consideration of it. *Prov. Med. and Surg. Jour.*, Jan. 12, 1848, p. 1.

In the short summary which I have given above of the advantages of turning over embryulcio, I stated one strong reason in favour of delivery by the alternate operation,—"*that it was more safe to the mother, because it could be performed earlier in the labour, and more speedily,*" than craniotomy, or the application of the long forceps. And I have the most sincere belief that the practice I propose may be the means of saving much, both of maternal and infantile life, by enabling us in some cases to abridge the mere duration of a difficult labour, so that we may terminate in a few minutes a delivery, which under other plans of treatment, might still be protracted onwards for hours or even for days. At the same time I am fully aware that when I state my conviction that the mere degree of *duration* and continuance of a labour is, *per se*, dangerous both to the mother and child, and very often fatal even in its influence, I venture to broach a doctrine which stands up alike against the opinion and the practice of some of the highest authorities in the obstetric profession.

[Dr. Sinpson gives several tables to shew that the proportion both of maternal and infantile deaths, and of obstetric complications, becomes more numerous as the duration of labour is prolonged :]

"But," says he, "I have brought forward the facts principally for the purpose of shewing that out of them, and in connection with them, there is deducible another all-important principle, in reference to a practical and obstetric operative inquiry of the present nature—viz., that when operative interference, such as the forceps, crotchet, turning, &c., is required, in order to terminate a difficult and morbid labour, the *time* of the labour at which that interference is had recourse to, regulates the amount of attendant danger much more than the details and effects of the operation itself. In other words, in accordance with the general law already illustrated, the extent of danger or fatality attendant upon operative and instrumental delivery, is regulated in a direct and demonstrable degree by the previous length of time allowed to elapse before the artificial interference is had recourse to; the resulting mortality increasing in amount according as the period at which the operation is performed is proportionally more distant from the date of the first commencement of the labour."

[After some further observations upon the same subject, he concludes :]

1st. That as a general law the amount and proportion of maternal and infantile deaths accompanying parturition are regulated and modified by the length and duration of the labour.

2nd. That the liability to various morbid obstetric complications during and after delivery is modified and regulated by the same law; and—

3rd. That the mortality attendant upon obstetric operations, such as the use of the forceps and crochet, is also strictly modified and regulated by it, —operative delivery being more and more fatal in proportion to the lateness in the course of the labour at which it is adopted; and, on the other hand, less and less fatal in proportien to the earliness in the course of the labour at which it is practised.

Now, the object of the present memoir is to propose that in cases of arrestment of the head at the brim of the pelvis, artificial delivery should be accomplished by turning, instead of being accomplished by the long forceps or craniotomy. And the operation which I thus wish to substitute has, as I have stated at the commencement of this section, this great and high advantage over the two others for which I propose it as an alternative, that, *cæteris paribus*, delivery by turning can, and must, as a general rule, be practised far earlier in the labour, than delivery either by the long forceps or the crotchet; and in proportion as it is practised earlier, so far also will it be practised with greater safety and success. A few remarks upon the time at which the employment of the long forceps or perforator is usually adopted will render this deduction more evident.

Prov. Med. and Surg. Journal, Feb. 9, 1843, *p.* 57.

When the long forceps are used in instances of arrestment of the head at the brim, they are in general never applied till the cranium is thrust and wedged down into the upper pelvic aperture to as great an extent as can possibly be effected by the unassisted uterine efforts, and till symptoms of local irritation, or constitutional reaction or exhaustion offer to appear. But before all this state of matters is brought about, both much expenditure of muscular and vital exertion on the part of the mother, and also much expenditure of time is usually required; and the walls of the maternal passages are liable to have become injured by irritation and compression. Before the assigned conditions are produced, many long hours commonly elapse, each one of them directly and rapidly adding to the chances of danger to the mother.

But it is principally as a substitute for craniotomy that I venture to suggest the operation of turning in instances of arrestment of the head, at or above the brim of the pelvis. And when we contrast the different times as far as regards the duration of labour, at which these two modes of delivery (craniotomy and turning), would be respectively followed in the same class of cases, we shall perceive still more strongly the advantages of the alternative practice. For turning, as I have just now stated, would necessarily be performed early in the course of the labour, and so far at a period when the danger would be comparatively slight, according to the law of duration which I have attempted to establish. Commit, however, the same morbid cases to the usual rules of management, by which they would be treated under the prospective idea that they would in all probability ultimately become cases of craniotomy, and mark the difference. The labour is allowed to go on from hour to hour, and possibly for one or two long and weary days, in order to give the child every legitimate chance of being, at last, expelled alive, or at least, expelled without operative mutilation. In the meantime, however, the chance of immediate or ultimate danger to both mother and infant increases fearfully in proportion as the labour drags on its duration. How long then shall we allow it to continue before we perforate and break up the child's head? Most modern authorities would answer that question by earnestly inculcating the propriety of not applying the perforator till the child were distinctly and certainly dead, (unless indeed the appearances of danger to the mother were extremely marked and imminent), for almost all eagerly and properly declare their abhorrence at the idea of "plunging an iron instrument into the centre of the skull of a living being."

Over both the operations for which I propose it as a substitute:—viz., delivery by the long forceps and crotchet, it possesses this great and weighty advantage, that it can be practised at a far earlier, and consequently at a far safer, period of the labour. But it is principally as an alternative for craniotomy that I feel anxious to introduce the operation of turning to the consideration of my professional brethren; and over craniotomy it possesses, in addition to the above, this other all-important advantage, that it offers the child a chance of life, while craniotomy implies the very certainty of death; and that while the existence of the sounds of the fœtal heart, and the continuance of the infant's life, would determine us to postpone, and postpone almost indefinitely, the delivery by embryulcio, the existence of these sounds, and the evidence they give us of the continuance of the infant's life, would determine us to adopt, and form indeed, cæteris paribus, the very strongest reason for adopting delivery by turning. In the one operation we would delay, and perhaps delay long, and hence dangerously, the delivery of the mother, because the child was living; in the other operation we would promote and hasten the delivery of the mother on exactly the same grounds on which we postponed it in the first, viz., because the infant was still living, and might still be extracted alive.

Prov. Med. and Surg. Journal, Feb. 23, 1848, *p.* 85.

[In another number of the same journal, Professor Simpson maintains, in opposition to Dr. Radford, that the neck of the child, if it be living or only recently dead, is so strong as to allow of such traction being used, that the sides of the cranium may become greatly compressed or indented under it; and that such compression is quite compatible with the life of the child. He remarks that experience alone can decide upon this, and relates several cases to prove that experience is in his favour. Dr. Simpson observes that Dr. Radford, like many other practitioners, has mistaken both in its principles and details the alternative operation above described, and it is on this account that he has entered into it so fully in the present paper. In Dr. Radford's paper upon the subject,* he did not mention Dr. Simpson's name, because he tells us, Velpeau was the originator of the practice and expounded his reasons for it. Dr. Smellie also adopted it, and so have many others, for, says Dr. Radford,]

During my practice, I have in several instances heard country practitioners mention that they turned the child when the pelvis was slightly distorted. To show that I have been long aware that in some cases of distortion of the pelvis, even when extreme, the child may be brought through in consequence of presenting footling; I will give a short abstract of a case which came before me some years ago, and which, with two or three others which point out the yielding of the pelvic bones, when affected with mollities ossium, during labour, shall be fully reported to the profession.

Case.—Kitty Banks, residing at Rolton by Bowland, aged 36 years, eighth pregnancy, a patient of Mr. Garstang, of Clithero, from whom all the particulars are derived. December 19th, 1835, Mr. Garstang consulted me on the case. Pelvis distorted from malacosteon; shape trilobed; measures from symphysis pubis to sacrum 2 inches and 4-10ths; from sacrum to the angle formed by the bending of the pubic bones, 1 inch and 2-10ths; across between the approximating pubic bones, 3-4ths of an inch. The largest circle to be described does not exceed 1 inch and 3-10ths. There is little difference in the space on either side. My opinion was that the Cæsarean section would be required, and I offered my services, if necessary. January 8th, 1836. Further consultation. February 9th. A statement of the termination of the case. February 10th. A more circumstantial report; in labour six to seven hours; liquor amnii discharged; *left foot*, and a coil of a flaccid, pulseless funis presented; pains very violent, and frequent. The body of the child was forced down, apparently without much difficulty; when the head came to offer, it was deemed right to perforate it, as the child was already dead. It was readily drawn through. The bones of the pelvis were observed to yield during the time of the pressure produced on the child by each pain, and also during its extraction.

On removing the placenta, the pelvis was examined, and each bone found to have assumed its previous distorted relative position.

Prov. Med. and Sur. Jour., Dec, 1847, *p.* 706.

[By the following paper the reader will perceive that Dr. James Wilson, of Glasgow, confirms the opinion of Dr. Simpson. He says:]

When the head, in certain cases of parturition, is prevented from entering the brim of the pelvis from defective form, or insufficient space, are we to resort at once to embryotomy—the general practice: or may we not, with some prospect of saving the child, accomplish the delivery by turning? For upwards of thirty years I have been in the habit, in such cases, of effecting delivery by turning, and I have good reason to believe that the lives of many children have been saved by this practice, without the safety of the mother having been in any degree endangered.

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* See Retrospect, Part XVI, p. 240.

In my opinion, turning can only be effected safely and successfully under certain conditions. I would not undertake its performance when labour had been long continued—the patient's strength exhausted—the uterine energy gone, or the uterus painfully and permanently contracted; nor would I recommend it when there was reason to suppose the child was dead, the pelvis very much contracted below its usual dimensions, or when the attendant was not familiar with the operation of turning.

Such is the deliberate opinion I have formed of turning in such cases; but at this distance of time it is impossible for me to state the circumstances which led me to adopt the practice. I rather think it was in consequence of having met with several breech presentations in the same individual, and where, by permitting the breech to come forward in the two first instances, the labours were tedious and severe, and the children were lost. In the third instance I saw the patient early, and, ascertaining the presentation to be the same as formerly, I introduced the hand as soon as the state of the os uteri would permit, brought down the feet, and the delivery was accomplished in half an hour: the powerful co-operation of the uterus greatly aided in the extraction. The child was quite lively. Two deliveries afterwards in the same individual were managed in the same way, and with like success.

The success attending these cases, led me to make some inquiries, which resulted in the following conclusions. When the head of the child presents at the brim of the pelvis, but cannot enter in consequence of the relative dimensions of the parts, the points of the head pressed upon are likely to be the upper and posterior parts of the parietal bones, and the superior part of the occipital bone. Now, the effect of such pressure must be to lower the arch of the cranium, and to the same extent to increase the transverse diameter of the head—thus augmenting the disproportion between the relative size of the head and pelvis. This may be proved to a demonstration by applying a certain amount of pressure to points above specified of a newborn child's head. On the contrary, after turning, when the child's head comes to the brim of the pelvis, the parts chiefly exposed to pressure are the squamous portions of the temporal and the sides of the parietal bones. Now, by experiment, it will be found that the result of such pressure is to diminish the transverse diameter of the head,—raise the sagittal arch and elongate the head, as we find occurs when the pelvis is rather narrow, or when the forceps are used. By this change, from a quarter to half an inch of space may be gained, and the head made to pass with comparative ease, when it could not have been made, by any means, to enter the pelvis with the vertex to the brim.

By turning early (and the sooner the better) we have the unimpaired vigour of the uterus to assist us in our extractive efforts:—the benefit of which, in these operations, I fear, is not sufficiently estimated. By turning, we have it in our power to bring the head into the best possible position for being brought through the varying diameters and changing axis of the pelvis. Besides, we can safely exert a considerable degree of extractive force by means of the body of the child, and that more effectually than we can do with the crotchet. Oftener than once I have been obliged to turn after the head was perforated, in order to finish the delivery when it could not be accomplished by means of the crotchet.

[Since in any case we cannot ascertain the exact size, form, and degree of ossification of the fœtal head, no rule in practice can be laid down from the mere measurement of the pelvis.]

Without trusting to the measurement alone to guide us in our mode of acting in these cases, perhaps the best practice is when we find that, after the uterus has been acting powerfully, and as we think properly, for a due period of time, and the head does not appear capable of being forced into the pelvis, to decide upon the steps to be taken. What are we to do? Are we at once to perforate the head, or permit the labor to go on, as some advise, till the child is dead, and probably also the soft parts of the mother so much injured as to prevent her recovery? or may we rather not resort to the less repulsive expedient of turning, with some chance of saving the child, and without adding to the risk of the mother? Dr. Dewees objects to turning in such cases; but, in my opinion, his admissions amount to a recommendation of turning, at least so far as regards the mother. He says, "It will therefore follow that turning is, and must always be, of doubtful efficacy as regards the child—as one calculated to relieve the mother, it may in many instances be successful—or if the practitioner has been debating within himself the comparative merits of the crotchet or turning, the latter will unquestionably merit the preference, as it gives a chance, though a forlorn one, to the child."

An objection urged against turning, is the difficulty connected with its performance. I grant that it is much more difficult than perforating the head; but surely this is no good reason for destroying the child. Although turning is a difficult operation, a perfect knowledge of it, and dexterity in its performance, may be acquired without any extraordinary efforts. But it is said we do not always save the child by turning,—true; but we never can save it by the crotchet. It is further objected, that we cannot always extract the head entire after turning,—true also; but in such cases, when the body is born, we can perforate the head behind the ear and evacuate the brain.

The use of the long forceps has been recommended by some as preferable to turning, but experience has led me to discover that the forceps are altogether inapplicable when the parietal bone overlies the pubis to any degree, as they cannot be placed over the sides of the head, which are the points we wish to compress. The only way in which the forceps can be passed in these cases is by the sides of the pelvis; consequently one blade of the instrument is applied over the face or forehead, and the other over the occiput. Now, compression by forceps so placed, will shorten the long axis of the head, but it will extend the transverse, and thus increase the disproportion which exists between the head and the conjugate diameter of the pelvis, and augment the difficulty we were solicitous to overcome.

There is not the smallest doubt that the crotchet has been frequently used when it ought not to have been. I believe there is no practitioner of experience who has not been sent for to sanction the use of the perforator after turning or the use of forceps had failed, where by another trial, and better directed use of these expedients, a living child has been delivered. From these, and other facts to which I might refer, it is to be feared that embryotomy is too lightly thought of; and, in conclusion, permit me to state, that our practice in these matters contrasts very strongly and unfavorably with that of criminal courts in cases involving life or death. With us, the destruction of the life of a child is often determined upon even without the formality of a regular consultation; whereas with them such is the importance attached to life—even when that life is loaded with imputed crime—that the greatest talent in the land, and the most respectable of the whole community, are summoned to judge and bear witness in the cause, so that life be not sacrificed without the most undoubted proof of guilt.*

Monthly Journal, May, 1848, *p.* 778.

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* I consider it proper to state, that this paper was written in answer to certain queries proposed to me by Professor Simpson, of Edinburgh, in September last, respecting the propriety of turning in these cases. It was never sent to Dr. Simpson, because I continued engaged in testing the compressibility of the heads of new-born children. Dr. Simpson kindly sent me his papers on this subject last month. They had been sometime published, but I avoided seeing them while I was making my experiments, lest his opinions should influence my conclusions; and it gives me great satisfaction to find, from the perusal of these very excellent papers, that our views and illustrations are so similar. Whatever may be the value of the practice recommended, Dr. Simpson has the merit of first giving it publicity.

[At a meeting of the Westminster Medical Society,]

Dr. MURPHY related a case of midwifery in illustration of a principle laid down by Dr. Simpson, that when the fœtal head was arrested in the brim of the pelvis, turning was preferable to the use of the long forceps. Dr. Murphy's patient had been in labor twenty hours; the head of the child was arrested in the brim of the pelvis, which was contracted to less than three inches diameter; the pelvis was also contracted at its outlet by the direction of the lower part of the sacrum and coccyx, and by the rigidity of the perinæum. He attempted to use the long forceps, but could not get them properly applied over the head, on account of the angle at which they were obliged to be used, owing to the obstruction offered by the perinæum. He consequently delivered by turning, which he accomplished with great difficulty. The child was dead from the time it took to extract the head; but he believed that had it not been for the obstruction at the outlet of the pelvis, it might probably have been saved. Chloroform was used in this case, but not to the production of a full effect. *Lancet, March* 18, 1848, *p.* 312.

138.—CASE OF CÆSARIAN OPERATION.—By JOHN GOODMAN, Esq., Manchester.

[The patient, Mrs. Sankey, after having given birth to three living children, became affected with mollities ossium, and at her confinement about five years ago, was delivered by craniotomy. On the 19th of November, 1845, Mr. Goodman received a message that she was again in labour, having gone to the full period of pregnancy. He says:]

On examination, per vaginam, I perceived that the contraction of the pelvis had already assumed a most formidable character; the promontory of the sacrum having borne down upon, and considerably decreased, the antero-posterior diameter. The acetabula were forced inwards and upwards, in the direction of the sacrum, and the tuberosities of the ischium were actually brought into apposition, but slightly separated again at the point where the rami of these bones communicated with the pubis; producing, with the posterior portion of the outlet, the form of the figure 8.

The principal passage was discovered to be situated superiorly, between the promontory of the sacrum and the converging ossa ilia; and its greatest diameter from one projection of the bone to another was not more than one inch and a quarter; the least, not more than one inch; and these could only be reached by the finger with the greatest difficulty. The os uteri could not be touched by any manipulation. The remaining passage was contracted to about three-quarters of an inch; and the external outlet was also considerably diminished by the junction of the ossa ilia. Having fully explained to the husband the true nature of the case, and impressed upon him the utter impossibility of effecting delivery by the natural means, and that the only chance of saving the life of either the mother or the child was by resorting to the Cæsarian section, I suggested the propriety of procuring a second opinion for the purpose of corroborating my statements, and Dr. Radford was accordingly fixed upon.

Upon Dr. Radford's arrival, Mrs. S. had been in strong pains for three hours, and after the necessary explanations, he fully coincided with me as to the necessity of the operation. After due preparations had been effected (in the accomplishing of which I have to thank him for much kind assistance), I proceeded to make the necessary incisions, about 3 a.m. The outer integument was divided by an incision of about nine inches in length, passing a few lines on the left side of the linea alba and umbilicus. This being effected, the uterus was freely and fully exposed, and I immediately made an incision in its walls to the extent of the former opening; the margin of the placenta was ascertained to correspond with the incisions. Dr. Radford seized the infant whilst I dislodged the head from the uterine cavity; and thus a fine living child was preserved from certain death.

I proceeded to remove the placenta as rapidly as possible, and by moderate pressure succeeded in reducing the uterus to its proper locality; at the same time carefully guarding against the protrusion of the intestines into the uterine cavity. The disarranged intestines were restored to their normal position by Dr. Radford, whilst, with the interrupted suture, I closed the external wound, without attempting the application of any ligatures to the uterus. It is scarcely necessary to state, that the ordinary dressings of adhesive plaster and bandage were applied. In an hour or two it was perceived that a portion of intestine protruded between two of the sutures, which was immediately and carefully reduced. Ordered: Mucilag. acaciæ, capiat cochl. 2 vel 3 magn. ter in dies. ℞. Ext. hyoscy. 10 gr. hora somni sumend.

After this administration, the patient became more than ordinarily composed. On the following day the symptoms were by no means severe, the pulse being 90, tongue clean, skin moist, and the urine evacuated; had some sleep, and the infant was doing well. On the 21st no alvine evacuation had occurred, but there was vomiting of a black and coffee-coloured fluid. An enema of spir. terebinth. and gruel was ordered to be administered through the œsophagus tube, and introduced as far as the sigmoid flexure of the colon. On the 22d, the bowels not having responded, and the vomiting still continuing, ordered: ℞. Magnes. sulphatis, six drachms; magnes. calcin. two drachms; tinct. card. comp. one drachm; aq. cinnam. three ounces. M. Capiat cochl. magn. tertia hora. Repet. pulv. vespere. To our great satisfaction these remedies induced a copious evacuation, and the vomiting ceased.

[The sutures gave way, leaving a large surface to heal by granulation; but notwithstanding this, she continued to improve until Dec. 6th, when excessive flatulence followed the imbibition of some draught porter. By the distension of the bowel, the sore was broken open, and a portion of intestine protruded through a fissure in the sore in the left iliac region. It could not be returned, and an artificial anus was the result. To effect the obliteration of this orifice, every measure that could be thought of, was had recourse to;—as paring the edges, the application of nitrate of silver, and the most careful coaptation of the edges, but for some time without effect. At length Mr. Goodman proposed the following plan:]

Let the edges of the wound be again touched with the nitrat. argent.; let two straps of adhesive plaster, made of strong cloth, be passed round the body of the patient, so that their terminating edges may reach just as far as the edges of the wound; let a bandage of common calico of five inches in breadth be made, with proper hip gussets, so as to reach entirely round the body of the patient, to the same length as the adhesive plaster; let four or five buckles, or straps, be attached to the termination of the bandage, so that it may be employed to draw the edges of the wound together; let the termination of the adhesive plaster and of the bandage *be sewed together* by a few running stitches, that by drawing together the extremities of the bandage, the plaster may be drawn simultaneously, and with it the skin and edges of the wound, which are adherent beneath. A small portion of lint was placed upon the artificial anus; the straps were tightened; and the edges of the wound were, by this means, brought into perfect apposition; and on the following morning I had the satisfaction to observe the *entire absence* of fæcal matter. The straps were now slightly loosened; the lint removed, the sore washed by a small sponge and water, and a fresh portion applied; the straps were again tightened, the edges being still in apposition, and this state of things was ascertained to be permanent. Week after week a diminution was observed in the amount of fluid which escaped upon any considerable movement of the patient (who never went down stairs), and so satisfied was the patient with the efficiency of the bandage, that she continued to wear it to the period of her death: and at the end of twelve months not more than half a teaspoonful of a serous fluid could be discovered. From the exceedingly propitious result of this case, I cannot resist the opportunity of recommending this contrivance in all cases of a similar nature; it may likewise be adopted where it is intended to dispense with the suture, and especially in all cases of abdominal wounds, either from accident or surgical operation, in which it will prove a powerful adjunct to the ordinary sutures, if it do not render their employment entirely unnecessary.

[The child, we are told, died of a severe bowel affection, when rather more than seven months old. On the 25th of September, 1847, Mr. Goodman was informed that notwithstanding his earnest remonstrances, his patient had again become pregnant. The induction of abortion being resolved upon, secale cornutum and infus. sabinæ were given in frequent doses until the 29th of October, when, appearing to produce no effect, they were discontinued. A few weeks afterwards, however, a fœtus of about two months' growth was aborted; and on the third day from the abortion, the placenta, which had been retained, was extracted. The patient gradually sank, and died on the 12th of December.]

Mr. Goodman's Monograph, p. 7, in British Record, Feb. 15, and March 15, 1848.

139.—ERYSIPELAS A CAUSE OF PUERPERAL FEVER.—By R. C. West, Esq. Hogsthorpe, Lincolnshire.

[During his attendance upon a mild case of erysipelas of the face, Mr. West had two midwifery cases; both these patients recovered without a bad symptom. But the case of erysipelas became aggravated and terminated fatally; a few hours before the death, Mr. West made some punctures in the face, and while thus engaged was summoned to another labour; this patient had puerperal peritonitis, but recovered. One day, after passing the catheter for her, Mr. West went to another midwifery case; this woman also shortly took the disease and died. Mr. West draws the following conclusions:—]

First. That as the cases attended on the 6th and 7th of January, recovered without the appearance of any unfavorable symptoms, a form of erysipelas, which may subsequently in its *malignant* and almost *putrid* stage originate puerperal fever, will not do so in its *early* stage.

Secondly. That as the disease did not come on in the same patients, notwithstanding my visiting them after attending the erysipelatous case when the symptoms *had* become formidable, the merely taking a lying in woman by the hand will not originate the disease.

Thirdly. That as the woman attended on the 15th of January recovered without any symptoms of the malady, although I might, at the time, be supposed to be tainted with both the erysipelas and the puerperal disease of Mrs. T. T., it requires something more than a mere *visit* to a paturient woman to communicate the disease from one puerperal patient to another.

Fourthly. That, bearing in mind the above suppositions, the circumstances immediately preceding and accompanying the attendances on both Mrs. T. T. and Mrs R. B., go to prove that it requires actual contact of the accoucheur's infected hand with the mucous membrane of the vagina, both to originate and communicate the disease. (Query—would not the heat and pain of the vulva in the first case confirm or strengthen this supposition?)

Fifthly. That the slight manner in which the disease appeared in the woman attended on the 23d, (notwithstanding I was still passing the catheter daily from Mrs. T. T., and had but just returned from a visit to Mrs. R. B., the latter being at the time almost typhoid,) would serve to prove that ablution, change of clothes, chlorides, &c., are of some little avail.

Sixthly. That erysipelas may originate a *mild* form of puerperal fever, which may in its turn communicate a *more malignant* form. (In the two cases here alluded to, the symptoms in the commencement were nearly the the same, the occurrence of dysuria in them both being somewhat remarkable; the fatal difference was in their *terminations*,—typhus and death in the one, gradual recovery in the other.)

And, *lastly*, that a puerperal fever, originating from a case of erysipelas, is not *necessarily fatal*.

Provincial Medical and Surgical Journal, *March* 8, 1848, *p*. 117.

140.—ON AMENORRHÆA, &c., AS AFFECTIONS OF THE OVARIES.—By Dr. W. Tyler Smith.

"Amenorrhœa and amenorrhœal sterility are clearly affections, not of the uterus, but of the ovaria. When we give emmenagogues empirically, with a view to excite the menstrual flow, we place medicine far in the rear of physiology. . The essential cause of amenorrhæa is the absence of the periodic ovarian excitement, and the maturation of ova. We can only cure amenorrhœa by bringing the ovaria into that condition which admits of their periodic excitement and the extrusion of ova, and this we must do either by local or general stimuli, or both. If in a case of amenorrhœa we paint the inner surface of the uterus with nitrate of silver, as some have recommended, or inject a solution of ammonia, and so produce the uterine secretion, we do not cure the amenorrhœa, unless, indeed, these agents affect the ovaria at the same time; we, in fact, only remove a *symptom* for the amenorrhœa; the absence of the menstrual flow is a *symptom*, and not the *disease*. We want a new term, which shall include both the ovarian and uterine conditions of this disorder.

In dysmenorrhœa, or painful menstruation, the greater portion of the pain consists of ovarialgia; the deep lumbar pain is decidedly ovarian, and not uterine. Many women suffer so much lumbar pain at each menstrual period, that it resembles, and, indeed, almost amounts to, a monthly attack of ovaritis. Almost all women in the better classes suffer so much pain and disturbance from menstruating, that we may almost say that menstruation, like parturition, lies in debateable ground, between physiology and pathology: but of this more hereafter. Part of the pain of dysmenorrhœa, then, is ovarian, and that which is uterine is only symptomatic of ovarian disorder. In dysmenorrhœa, there is doubtless induced a pathological state of the uterus; but there would be no uterine excitement without previous excitement of the ovaria. On the other hand, we have seen patients in whom the uterus is wanting, from congenital deficiency, have all the ovarian pain of dysmenorrhœa. Uterine disturbance must be considered as a secondary condition—an aggravated symptom of ovarian excitement in painful menstruation. Of one part of the uterine pain of dysmenorrhœa, I have a word to say—I mean, that which women call the bearing-down pain, and of which they complain so much from the pubes downwards to the knees. This bearing-down I believe to be a tenesmus of the os and cervix uteri; it is most frequent and severe in women who have born children, and in whom the os and cervix have been developed. I have before directed your attention to the points of similarity between the healthy actions of the various sphincteric muscles; you will find the pathological analogies equally interesting. The tenesmus uteri is analogous to the tenesmus of the bowel, or the tenesmus of the bladder. These spasmodic affections of the outlets of the sexual, urinary, and intestinal canals, are comparable with many other spasmodic symptoms. Thus, the globus hysterici, or sphagiasmus, is a contraction of the pharynx, and the laryngismus affecting the larynx, and the form of cardialgia dependent on contraction of the cardia, are analagous affections of the respiratory and digestive tubes. Of course, where there is disease of the os and cervix, the tenesmus uteri will be more distressing, and will often require the chief part of our treatment, yet the ovarian excitement in the back ground must not be forgotten. Its pathological synergies are quite as decided as those of a physiological kind.

But the most serious disorders of menstruation are the hysterical or epileptic convulsions, which are sometimes excited by the ovarian irritation. The first attack of epilepsy frequently invades women at the coming on of the catamenial periods: young girls are liable to convulsive attacks on the first appearance of the catamenia; and in confirmed epileptics the fits are always most violent and prolonged during the accession of the periods. *Ovarian irritation is, I am persuaded, the most important of all the causes of epilepsy in the female.* Ovarian irritation is also a fruitful source of hysterical convulsion, and there is no other state of the economy in which the fits of hysteria and epilepsy run so much one into the other, and where the diagnosis requires to be made with equal care. In these cases it is not so much the uterine as the ovarian excitement which is the cause of the convulsion. It often happens that the fits of epilepsy occur before the uterine secretion, when there is no uterine disturbance, and cease immediately on its appearance, the secretion from the uterus effectively depleting the neighbouring ovaria. In all these cases the treatment must be, not merely that which removes uterine disorder, but that which relieves the ovarian excitement and irritation, both in the intervals between the periods and in the periods themselves. In the pathology as well as in the physiology of menstruation the first place must be given to the ovaria.

Lancet, Feb. 19, 1848, p. 203.

141.—CASE OF ULCERATION OF THE LINING MEMBRANE OF THE UTERUS, ACCOMPANIED BY PREGNANCY.—By Dr. C. Clay, Editor of the British Record.

[Ulceration of the lining membrane of the uterus is a very rare disease; a few cases, however, are on record, but none in which, as in Dr. Clay's, pregnancy took place. The patient had been under treatment for two years before Dr. Clay was consulted. He says:]

The principal symptoms before my attending the case, were occasional and excruciating pains; the uterus itself considerably enlarged, and of a soft spongy feel; its size twice that of a large orange: when pressed upon over the pubic region was painful to the touch, which pain was increased when the os and cervix uteri were examined, per vaginam, by means of the finger. Whenever such examinations were instituted, they were followed by severe pain and increased discharges. These were irregular and sometimes small in quantity, so that frequently for days together they appeared as if about to cease. Such cessation, however, was always accompanied by these concomitants; viz., enlargement of the organ—greater pain and tenderness—and a sudden discharge of accumulated matter.

When this last occurred in any quantity, it was invariably streaked with blood. The character of the matter discharged was most decided pus, and highly fœtid. The constitution suffered severely, the countenance was sallow, the body emaciated, and the patient so weak, that it was with great difficulty she could move about the room. Every method of treatment that could possibly be devised was practised, so as to improve the constitution; and washes of various descriptions had been applied by syringe. But every attempt failed in affording any but the most temporary relief, and her case was looked upon as hopeless. Two eminent physicians in London were consulted, but with the same result, and her mind was prepared for the worst. *She was in this condition when I was called in for the first time*, and the case certainly appeared to be rapidly approaching its last stage. What rendered it still more lamentable was the depression of mind, caused by a sudden transition from a state of comparative affluence, to a very slender means of subsistence. This, combined with the cares attendant upon a family of small children, told terribly upon her weakened frame.

In order to labour under no misconception as to the real nature of the case, the speculum was applied, and the os uteri ascertained to be enlarged, mal-shaped, and of a dark liver colour. When the speculum was introduced the parts were well washed by means of a powerful syringe, and a strong light brought to bear on the uterine orifice. Pus was distinctly seen issuing in considerable quantities from the os uteri, and occasionally streaked with blood. The os and cervix uteri were very tender and painful when touched, and much increased in size. It must be borne in mind that this case had already existed, in a greater or less degree, for more than two years. For my part I imagined that nothing but palliative treatment could relieve the patient, and I accordingly ordered injections, containing nitrate of silver, sulphate of zinc, creosote, &c., &c.

[The nature of the discharge was by these means temporarily improved, and the pain was controlled by the administration of morphia. The uterus gradually increased in size, jerking movements resembling those of a fœtus were felt, and at length the fœtal circulation was heard; and both Dr. Clay and Dr. Radford were satisfied of the existence of pregnancy, though the os was unclosed, and a large bougie was passed at least four inches into the uterine cavity. Labour came on at about the seventh month, and a small emaciated, but living, child was expelled. A year after delivery, the discharge still continued, but the pains were much alleviated.]

British Record of Obstetric Medicine, April 1, 1848, *p.* 135.

142.—ON INFLAMMATION AND ABSCESS OF THE UTERINE APPENDAGES.

—By Dr. Henry Bennet.

[This disease has usually been considered to be all but characteristic of the puerperal state; Dr. Bennet, however, thinks that it is not at all uncommon under other circumstances, having hitherto been often confounded with acute or chronic metritis, or iliac abscess. He says:]

The principal difference that exists between the puerperal and non-puerperal forms of inflammation is the following:—In the former, owing, probably, to the increased quantity of fibrin contained in the blood, there is a great tendency to inflammation. Hence, if the structures contained in the lateral ligaments are attacked with inflammation, the tendency of the latter to invade the peritoneal folds themselves, and the surrounding tissues, gives rise to the formation of large pelvic inflammatory tumors, abdominal adhesions, and perforations, often ending in death. In the non-puerperal state on the contrary, inflammation of the uterine appendages seldom extends to the peritoneum, and the purulent formations nearly always escape, in a latent manner, by the rectum or vagina. In this form of inflammation of the organs contained within the folds of the lateral ligaments, the element most frequently attacked is the cellular tissue which separates the peritoneal folds, and surrounds the ovaries, round ligaments, and Fallopian tubes. It may be produced by any cause which exaggerates the vitality of the uterine system. The author has seen it occur frequently from ulcerative diseases of the cervix, or from a severe fall. The inflammatory tumefaction to which it gives rise may be attended with sufficient swelling to be recognised by pressure over the abdominal parietes; but an accurate diagnosis can only be formed by examination per vaginam. It may terminate by resolution, but more generally by suppuration, and the discharge of pus by the rectum, vagina, or bladder, or by perforation of the abdominal parietes. When this takes place, however, the disease is not brought to a close, but during a longer or shorter period the patient continues to discharge pus in a latent manner, and to suffer from the symptoms of chronic uterine or pelvic disease.

[With regard to treatment, Dr. Bennet insists on the importance of a correct diagnosis; since in acute metritis, the disease with which inflammation of the ligaments is most liable to be confounded, it is not of such paramount importance to subdue the inflammation so rapidly. He would apply leeches repeatedly and at short intervals on the abdominal parietes over the seat of inflammation: enforce complete rest, use cathartic, mercurial, and other active antiphlogistic treatment. In the chronic form of the disease, internal leeching and vaginal injections may be used, and a more tonic plan of treatment adopted.

When this paper was read at the Medico-Chirurgical Society, Mr. Acton stated his belief that these inflammations of the Fallopian tubes and ovaries were analogous to swelled testicle in the male, and frequently came on as a sequence of gonorrhœa. The adhesions produced by these extensions of gonorrhœal inflammation he believed to be a frequent cause of the sterility of prostitutes. Dr. Bennet, however, could scarcely adopt this interpretation. He said :]

There was not that continuity of tissue between the mucous surface of the female genital organs and the ovaries that there was between the urethra and the testicles. If therefore it occurred under these conditions, it must either take place by metastasis, or by the extension of the inflammatory atmosphere to the lateral ligaments. When inflammation did occur in the uterine appendages in cases of virulent gonorrhœa, he (Dr. Bennet) should be inclined to adopt the latter interpretation, and to attribute its origin to the mere extension of the inflammatory action from the vaginal or uterine mucous membrane to the other parts of the uterine system.

Medical Gazette, Feb. 11, 1848, *p.* 243.

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143.—ON VARICOSE ULCER OF THE OS AND CERVIX UTERI.—By J. Whitehead, Esq., Surgeon to the Manchester and Salford Lying-in-Hospital.

This ulcer is generally met with in women of the bilious temperament and hard fibre, who have been subject to the piles and profuse menstrual discharges, and to derangement of the biliary organs. The premonitory condition of the parts consists in a hardened and hypertrophied state of the cervix, which is traversed in various directions by a number of tortuous, dark-coloured trunks, about the thickness of a probe or a crow's quill, raised above the surrounding surface. Larger and more prominent points are here and there noticed, indicating the situation of inosculation of one branch with another; and generally, at one of these points the ulcerative process is set up, which soon extends through the coats of the vessel, and escape of blood, in greater or less abundance, immediately ensues. The ulcer, which is not long after in being developed, presents an uneven, livid aspect, with irregular margins, near which a few tortuous vessels may be seen ramifying; it now secretes a quantity of pus, and often has small dark clots of blood or fibrin, the size of a pin's head, lying loose upon the surface. It usually occupies but one labium, the anterior more frequently than the posteror; but sometimes the whole circumference of the cervix is implicated.

Mr. Whitehead remarks that the lesion of the veins of the cervix sometimes extends itself, inducing a general uterine phlebitis, which almost inevitably occasions abortion. We do not know this disease ourselves as occurring during pregnancy; and we wish that Mr. Whitehead had related the case or cases, on which he founds this important remark. The varicose ulcer causes much local and constitutional distress; and the discharge which accompanies it is at first glairy, then brownish and pirulent. Spurious menstruation, during pregnancy and lactation, is said to arise from it; labour is complicated with hemorrhage; and the lochia are profuse, and last for several weeks beyond the ordinary time. The treatment, according to our author, includes bleeding from the arm and local bleeding by leeches or cupping; the patient should strictly keep the recumbent posture; and 3 to 5 grains of calomel, with hyoscyamus or opium, followed by a saline aperient, should be given. The local treatment consists in applying to the ulcer a strong solution of nitrate of silver; which is to be changed, aft the acute symptoms have subsided, for the solid caustic. The discharg of blood is to be arrested by a strong solution of sulphate of zinc, with vi opii and tincture of matico, applied directly to the diseased surface. "An this applies equally in all cases of passive hemorrhage, when the discharg is furnished from ulcerated surfaces, as well as in other chronic discharge whether sanguinolent, purulent, mucous, or watery, issuing from the nec of the uterus." We may add, for ourselves, that gallic or tannic acid i solution, or incorporated with some ointment in the shape of a vaginal sup pository, have proved the most generally useful remedies for this purpos This form of ulcer, in our opinion, when seen during pregnancy, is a loc exponent of a general congestion of the uterus; and we believe that a sim ple granular ulcer may assume the characteristic marks of a varicose ulc to the sight merely from the placenta being fixed and formed near the nec of the uterus. *Brit. and For. Medico-Chirurgical Review, April*, 1848, *p.* 468.

144.—ON PRETERNATURAL ELONGATION OF THE CERVIX UTERI.—By D

J. M. Coley, Senior Physician to the Pimlico Dispensary, &c.

[This state Dr. Coley says, is occasionally a consequence of passive congestion of the uterus, and occurs at other times in conjunction with the fibrous tumour of the uterus. Dr. C. observes.]

The cervix is not only extended in this disease, but is also much increased in diameter, being occasionally much longer and thicker than the largest teat of a cow; which it also much resembles in shape and structure. Th situation of this elongation will be found immediately beneath the urethr It is perfectly free from all tenderness. and the only symptoms indicatory o the disease are, distressing sensation of dragging, or prolapsus, accompanied with pains in the back, which continue whilst the patient preserve the erect position. As far as my own observation has extended, pregnancy never occurs during the continuance of this preternatural condition of the cervix. The cause of this will at once resolve itself to those who are conversant with natural structure, the position, and the physiology of the os and cervix uteri, in connextion with the process of conception.

Treatment.—When this infirmity is connected with passive congestion of the uterus, it may be greatly relieved by the treatment I recommended for the latter disease, viz., the internal use of iodide of iron, or ioduret of mercury, in conjunction with rest in the horizontal position. It is to be observed, however, that in established cases this treatment *only* affords *relief*, a permanent hyperthophy remaining to a considerable and inconvenient extent. Much benefit is also derived from the introduction of a soft sponge which must be removed at bed time. The dragging sensation is in some cases so severe, as to require the following decided treatment, and which I have invariably found has effected a radical cure, viz., the excision of the superfluous elongation; an operation perfectly safe in the absence of specifi disease.

[Dr. Coley relates two cases to illustrate the above remarks; the medicines above recommended were given, and in one case the exuberant portion of the cervix was excised, with speedy relief to all the symptoms.]

British Record, Jan. 1, 1848, *p.* 23.

145.—ON RETROFLEXION OR RETROVERSION OF THE UNIMPREGNATE UTERUS.—By Professor Simpson.

[Dr. Simpson applies the generic term of Retroversion to all posterio displacements of the uterus; the difference between the varieties, whic are of every shade, being one of degree, and not of kind. Retroversion then, of the unimpregnated uterus, formerly supposed a rare occurrence, i in reality a frequent one. Its functional symptoms are, for the most part, those of uterine disease in general; since therefore they may indicate other affections besides retroversion, and since the latter may exist without almost any of them, the functional symptoms are far inferior in importance to the physical signs. These are thus enumerated by Dr. Simpson:]

Speculum.—The employment of sight, by means of the speculum, assists us in no respect in the diagnosis of retroversion.

Tactile Examination.—On an accurate vaginal examination we feel an apparent projection of a solid tumour between the uterus and rectum, when applying our finger, or fingers, behind the cervix uteri to the posterior part of the upper reflexion, or roof of the vagina. The same firm mass is felt through the anterior wall of the bowel in making an anal examination. The tumour or mass feels smooth and roundish on its surface; is often sensitive on pressure, more especially if the retroversion is recent, or when the posterior wall is (as often happens) congested and engorged; is generally capable of being moved more or less easily by the finger; and varies in size according to the degree of displacement, and the morbid or healthy state of the uterine walls. The os and cervix uteri may be displaced forwards, or they may maintain their usual position. The whole body of the uterus is often prolapsed and lower than its natural situation: but occasionally it is quite normal in these respects.

[To determine whether this tumour is the displaced fundus and body of the uterus, we may manipulate with the fingers of one hand in the vagina, and the other on the pubes or in the rectum: but, says Dr. Simpson:]

A far more simple and certain method is to determine the precise situation of the fundus and body of the uterus, not through either the intestinal canal behind, or the urinary canal in front, but through the intermediate genital canal itself. The proper canal of the uterus is of course, too narrow to allow us to introduce our finger into it; but by passing into it a slender metallic finger (if we may so speak,) we can easily by it ascertain, amongst other matters, any change in the direction of its cavity, and consequently in the direction of the body and fundus of the uterus itself. The employment of the uterine bougie readily enables us to do this.

Examination by the Uterine Sound or Bougie.—Some years ago I gave a full account of the instrument, and the mode of using it.* It has the configuration of a slender male catheter: tapering in form: knobbed at the extremity; divided into sections, so as to measure, when required, the length of the uterine cavity; and provided with a handle, smooth on its posterior surface and roughened on its anterior, in order to make the operator constantly aware of the position and direction of the point and concavity of the instrument, when it is passed into and hid in the uterine cavity.†

This instrument can be easily and readily passed into the uterine cavity, so as to enable us to measure its depth: to examine, more distinctly than we have otherwise the power of doing, its fundus, body, and cervix; to ascertain the presence of strictures in the canal; diseased states of the cavity, and walls of the organ, &c. I have used it daily for five or six years past, and have never, in any instance, seen any serious irritation, or any bad result to the uterus, follow its employment; whilst it has enabled me and others to detect and discriminate morbid conditions of this organ, that were, by any other means, entirely beyond the reach of correct diagnosis. Its power of detecting retroversion of the unimpregnated uterus depends, as I have already stated, upon its directly and easily enabling us to ascertain the direction of the uterine cavity, and hence of the body and fundus of the uterus, which form the walls of that cavity. When the uterus is in its normal position, and is placed with the long axis of the organ, and consequently the long axis of its cavity, in a line parallel with the axis of the pelvic brim, the point of the bougie, when introduced into the uterns, passes upwards and forwards in the direction of the umbilicus: and the concavity of the instrument (or the rough side of its handle) is directed towards the symphysis pubis.

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* See Monthly Journal of Medical Science for 1843, p. 703, and Retrospect Part 8.

† The normal length of the cavity of the healthy uterus is two and a half inches, and at that point the bougie is marked, by a single elevation or knob, which can be readily felt when the instrument is under use, and at once advertises the practitioner that it is introduced the full length of the uterus. When the uterus is hypertrophied,—when enlarged with fibrous tumours, &c., &c.,—the cavity is elongated, and the degree of its elongation can be easily measured by the bougie. There are two elevations upon it, at four inches and a half from the point, in order to enable the physician to take his measurements easily without withdrawing it. Elsewhere than at two and a half and four and a half inches from the point there are depressions or grooves at inch distances for the same purpose. In cases in which the uterine cavity is diminished in length by inversion, &c., the bougie equally enables us to asceriain that point. The whole length of the stem is nine inches.

When, however, the uterus is retroverted, the point of the instrument, instead of passing up vertically and forwards, is resisted in that direction, and can only be passed horizontally and backwards towards the hollow of the sacrum; its concavity and the rough side of its handle thus looking towards the sacrum instead of towards the pubis, and at once showing the altered position of the cavity, body, and fundus of the uterus. But the diagnosis may be made out still more completely and accurately by the further use of the bougie. For,—

1. Besides showing in the manner stated, the direction of the uterine cavity, and hence of the body and fundus of the uterus, by the direction in which the instrument itself passes,—

2. We can ascertain by a vaginal or anal examination of the supposed tumour, that the extremity of the uterine bougie is lodged in *its* centre, showing the swelling to be produced merely by the displaced fundus of the uterus; and,—

3. After this, by turning the bougie gently round so as to bring the concavity, or rough side of its handle, to look to the pubis, instead of looking, as at first, to the sacrum, we can replace the uterus and feel it upon the bougie if required, through the abdominal parietes in front. We can thus certify to our own minds that we have nothing on the point of the instrument except the fundus uteri. And again, if necessary, by introducing a finger into the rectum or vagina, and then retroverting or replacing the uterus at will, we can as it were make and unmake, as often as required, the apparent tumour lying between the uterus and rectum, and thus further prove this tumour to be nothing whatever but the retroverted fundus uteri.

[Retroversion requires to be diagnosed; 1. from *pregnancy*, with which it has sometimes been confounded.]

2. *From Fibrous and other Tumours in the Posterior Wall, &c., of the Uterus.*—This is one of the most frequent errors of diagnosis which I have met with, and one into which, in former times, I myself frequently fell. The attendant functional symptoms are in all respects the same; and on examination there is the same continuity of structure felt between the cervix uteri and the body lying between it and the rectum. In this way the retroversion of the uterus has very often been mistaken for a morbid growth upon the back part of the uterus, and even described as such. But the introduction and direction of the uterine bougie at once enables us to solve the difficulty. The bougie passes backwards into the very body and centre of the apparent tumour, at once showing it to be the retroverted fundus uteri. It may be proper, however, to add, that instances are by no means rare in practice of the preseuce of small fibrous tumours attached to the posterior wall of the uterus being conjoined with retroversion.

[From *carcinomatous tumour*, or from common *puerperal hypertrophy*, the diagnosis is made in the same manner.]

3. *From Ovarian Tumours in their earlier Stages.*—When the ovary enlarges from multilocular degeneration, or other causes, it almost always

first grows downwards into the space lying between the back wall of the uterus and the anterior part of the rectum, resting thus upon the roof of the vagina behind. In its enlargement it almost invariably pushes the uterus anteriorly, and *before* it; and this relative position of the uterus.to ovarian tumours is often an important matter in the diagnosis of ovarian disease in its later and more advanced stages. At first the body of the enlarged ovary may be mistaken for the retroverted fundus uteri, more especially as the os uteri is generally displaced forwards. But the introduction of the bougie shows the uterus to be in its normal situation, and at the same time generally enables us to draw the uterus so far forwards as to make us certain that it is not attached to the existing tumour, and does not form one continuous structure with it. So far the evidence is merely negative. If further evidence of a positive kind, of the nature of the tumour is required, we may obtain it by the use of a fine exploring needle, a means of diagnosis of great value in this as in other complications.

4. *From Pelvic Cellulitis.*—Inflammation of the cellular tissue of the pelvis, limited or more diffuse, is certainly a frequent disease, both after delivery and in the unimpregnated state. I have seen it now at many different periods of life, from six years up to sixty. It is generally spoken of as a "pelvic abscess," but improperly so, for it does not always necessarily terminate in abscess, any more than pleurisy necessarily terminates in empyema. When the inflammatory effusion seems limited, as it sometimes is, to the space between the uterus and rectum, the firm tumour, or swelling formed by it, may be mistaken for retroversion. The direction of the bougie, when introduced into the uterus, will show us, however, that the uterus is *not* retroverted; and the accompanying symptoms, and, if necessary, the use of the exploring needle, will enable us to complete the diagnosis.

5. *From Extra-Uterine Conceptions lodged between the Uterus and Rectum.*—Nauche, in his *Maladies des Femmes.* (p. 108,) mentions a case in which an extra-uterine conception was mistaken for a retroverted uterus. I lately met with an instance where it was a matter at first of great doubt and difficulty, whether the tumour lying on the anterior wall of the rectum, and accompanied with sudden symptoms of rupture into the peritoneum, was an enlarged and retroverted uterus, or an extra-uterine conception. Examinations with the bougie at once showed the uterus to be both normal in its size and in its position.

6. *From Organic Disease in the Anterior Wall of the Rectum.*—In a case of Dr. Marnoch's, the tactile examination of a tumour lying between the uterus and rectum, gave me the idea that it was retroverted uterus. The employment of the bougie, however, showed the uterus to be normally placed. On more minutely examining *per anum*, the anterior wall of the rectum was found much thickened and indurated; the patient died some months subsequently of carcinomatous stricture and disease of the rectum.

[As to *Treatment*,—If the displacement is recent, it is sometimes sufficient merely to replace the organ, if at the same time we take care that the patient lies for a length of time on the side or face, prevent accumulation in the bladder or rectum, reduce local inflammation, and restore the tone of the parts by astringent injections, &c. But we generally meet with the retroversion in a chronic state, and here there are three distinct indications of treatment. 1. *The removal of any coexisting morbid state of the uterus*, as congestion, hypertrophy, or chronic inflammation: these, however, are generally the effects of the retroversion, and will be relieved by the fulfilment of the 2d *indication*, which is *the restoration of the uterus to its normal situation*. This is accomplished by the uterine bougie, when we make the diagnosis, as has been above described. 3d. *The retention of the replaced uterus in situ*. Of this Dr. Simpson says,]

After detecting the ease and certainty with which the uterine bougie could be used for the discovery of retroversion, and for the temporary restitution of the organ, it appeared to me that the most direct and perfect method of retaining the replaced uterus *in situ* would consist in some means of retaining and fixing, as it were, the end of the bougie for a time in the uterine cavity. I soon found that the restoration of the uterus temporarily, from day to day, with the bougie, was insufficient, and that some more permanent means of keeping the organ replaced and retained were necessary. But one primary and important point required to be solved:—Would the uterus bear with impunity the presence of such a body for a length of time in its own cavity? My first experiment on the subject I made with extreme anxiety, and great misgivings as to the results. I watched the case from hour to hour, and from day to day, and was delighted to find that the presence of the instrument was borne by the uterus without irritation or annoyance. The patient was almost entirely incapacitated from walking, by retroversion of the uterus, before it was used. After thus wearing for some months a wire pessary in the cavity of the uterus, she so far recovered as to bear two children, one in this country, and subsequently another in India. I soon found, in other cases, that, when the instrument was once properly fitted and adjusted, it could be borne with perfect safety, and without any pain or inconvenience. Occasionally I have since met with cases in which the uterine pessary has created so much irritation as to render its withdrawal necessary in a few days after it was introduced. But these cases have been exceptions, and by no means common or frequent exceptions, to the general rule: and I have allowed the instrument to remain in the uterus for two, four, six months, or longer. Within the last few weeks I have removed two uterine pessaries, one of which I had introduced eight, and the other nearly ten months previously. They are not to be interfered with at the menstrual periods. Sometimes, though by no means always, a slight menorrhagia follows their use, particularly for the first period or two after their introduction.*

[Dr. Simpson here gives us several engravings representing the different instruments which he had used, and which he at present generally uses to keep the retroverted womb in its proper position. We are sorry that we have not had time to prepare these engravings. The reader will find them in the Dublin Quarterly Journal, from which we take our extracts; and we advise him to go to that Journal for further information. The instrument chiefly used consists of a stem 2 1/3 inches long, which is introduced into the uterine cavity, being prevented from going further by its insertion into a flattened ovoid bulb or ball—the os uteri thus rests upon this bulb when the stem is within the cavity. From the under surface of the bulb, and nearly at right angles with it, but inclining downwards and forwards in the direction of the vagina, is inserted another stem; a vaginal hollow portion or curvilinear tube, something like a female catheter, into which, like a trocar into a canula, can be pushed an additional portion, to be fixed externally to the pubes. Dr. Simpson adds,—]

It is perhaps, almost unnecessary to add that, if the instrument is found to press disagreeably on any part, it may be easily bent without removing it, so as to take off that pressure; and it may thus require to be modelled and adjusted again and again in various parts, in order that it may be ultimately worn without annoyance and inconvenience. When required to be withdrawn, the pubic portion is first bent back, so as to be clear of the pubis; then the vaginal pieces are unlocked; and, lastly, the internal part is extracted. The time during which it requires to be worn, in order to effect a cure, varies in different cases from one to two weeks to many months. The recent or chronic character of the case, and particularly the degree of tendency to the recurrence of the retroversion are our principal guides on this head.

The employment of these uterine pessaries will cure many, but by no means all cases of retroversion of the unimpregnated uterus. And even when not sufficient to cure, they will generally relieve the patient, and palliate her annoyances and sufferings. If the retroversion were causing no unpleasant symptoms, nor interfering with the functions of the uterus, I have always recommended the avoidance instead of the adoption of local measures and remedies, either mechanical or others. When the reverse was the case, I have employed the means I have mentioned, with the effect of curing many and of relieving others. In the few exceptional cases in which no pessary could be borne, in consequence of the irritable state of the uterus, or where they failed to produce a cure, I have contented myself with reducing this morbid state of the parts by leeching, external counter-irritation, the application of belladonna ointment pessaries, &c., and rest, in the first instance, followed afterwards by the employment of local and general tonic measures. The patient often derives much relief from wearing an abdominal bandage (as those of Hamilton and Hull), with a supporting perineal pad.

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* Mr. Young, our cutler in Edinburgh, makes them of German silver; sometimes he has electrotyped them for me, but this addition is unnecessary.

[We think that a most important omission on the part of Dr. Simpson in this valuable paper, is the description of the best position in which to place the female before the introduction of the uterine sound and the wire pessaries which he describes. It may be very easy for Dr. Simpson, with his experience, to introduce his sound, however deflected the uterus, and in whatever position the woman may be; but we maintain that it will often be very difficult, even by the most experienced, to introduce the sound or the wire pessary in the usual obstetric position. The instrument is generally held in the right hand, and the forefinger of the left hand is placed at the os uteri to direct the point of the sound: this may be easy enough in cases of anteversion, or in the natural position of the womb: but it is just the worst position to place the patient, and the worst way in our opinion to hold the instrument and to place the finger in cases of retroversion. Even holding the sound in the left hand, and feeling for the os uteri with the forefinger of the right hand, is a better plan than the first, when the practitioner is a little more practised in the manipulation.

But we beg to recommend a still better plan, which will be found to render the introduction of both sound and wire pessary a comparatively easy operation. It is, in a case of retroversion, to place the female on her knees and elbows, with her face on a pillow; the introduction of the sound, &c., will then be found to be as easy as, and very like that of the catheter in the male: the os uteri is pointing downwards and forwards, the forefinger of the left hand is very easily placed upon it, the point of the sound is then as easily passed into the cervix, and by gently depressing the handle, as with the male catheter, the sound passes upwards and backwards to the fundus uteri. Moreover, the patient is now in a much better position for the fundus to be replaced forwards. It is the natural position for such an operation. In like manner for anteversion, we suspect that the best position would be on the back; but of this we have had no experience. In corroboration of our views respecting retroversion, however, we have had lately several cases. We must also warn our friends against *riding a hobby* of this kind too hard. We ought not to forget that in common *prolapsion* of the womb, when the os is pointing downwards and forwards, the fundus must necessarily point upwards and backwards, thus exactly *reversing* the natural position of these parts. What will be the consequence of this malposition?—that, if the organ be at all enlarged, which it often is for months after labour, by passing the finger between the cervix and rectum, we shall find the back of the womb, and even the back of the fundus itself, pressing more or less on the rectum, and unless we were aware of this circumstance we might easily set it down as a case of retroversion, whereas it may be nothing more nor less than a simple prolapsion, or slight falling down of the womb into the inferior axis of the pelvis. This mistake might be confirmed when it was discovered that in such a case of prolapsion both the uterine sound and the wire pessary were just as useful in changing the direction of the fundus uteri and placing it upwards and forwards, as if it had originally been a real case of retroversion.]

Dublin Quarterly Journal, May 1848, *p.* 371.

[Dr. PROTHEROE SMITH also gives us some excellent remarks on flexions of the uterus. After remarking upon the supposed rarity of these affections, Dr. Smith observes,—]

Torsions of the uterus are very common; and I confidently assert that numerous instances of what have been pronounced to be incurable tumours, are cases of retroflexion, and perfectly (even easily) curable. The use of the uterine sound, or bougie, has placed this beyond contradiction or doubt; and I believe the question of curvatures of the uterus, will, ere long, suggest itself to most obstetric practitioners in the diagnosis of obscure uterine symptoms, though hitherto but few authors have directed the attention of the profession to this subject. Professor Simpson's laborious inquiries and investigations have opened a path to modern discoveries and improvements in the mode of examination and treatment of the maladies of the uterus, and to him we are indebted for showing the frequency of the disease of which I am about to treat.

During a visit to Edinburgh, in the autumn of 1844, he called my attention to the fact that these affections are of common occurrence; since that, experience has proved to me the correctness of his opinion. With the knowledge I had thus gained, I soon discovered, on my return to London, the value of Dr. Simpson's observations, and abundant opportunities of pursuing my researches have been afforded to me at the hospital for women. Many cases, which had previously baffled every attempt to ascertain their real nature, were now readily shown, by means of the uterine sound, to be flexion and displacement, and were cured as easily as discovered. The records of my hospital, as well as of my private practice, show a large number of patients, who, for years, had laboured under these distressing maladies, restored to health and usefulness, and in not a few the cure has removed the only cause of sterility.

The flexions of the uterus are either forwards, backwards, or to one side. In the first (antiflexion), the os and cervix remain in their normal position, whilst the body and fundus are bent forwards and descend more or less behind the symphisis pubis and bladder. In the second (retroflexion), the os and cervix still remaining stationary, the body and fundus are bent backwards towards the concavity of the sacrum, and this is far more common than antiflexion.

In the third (lateral curvature), the cervix is inclined to one side, generally the left, and the displaced fundus occupies the sacro-iliac cavity, or that part of the foraman ovale of the corresponding side, thus forming a double flexion. In addition to these curvatures, instances occur in which the os and cervix are bent upwards, backwards, and to one side, (chiefly the left), whilst the fundus and body retain their natural position and direction. In the virgin state, I have very frequently noticed a peculiar mal-position, in which the os looks directly forwards, and the cervix and body lie parallel to the perinæum, the fundus abruptly bent forwards upon the anterior (now upper) surface of the cervical portion, and comes into contact with the examining finger immediately in front of and above the os. In this instance the uterine sound will readily pass backwards to the extent of an inch and a half, and then by directing its front abruptly forwards, will be found to pass another inch into the cavity of the fundus. Thus this peculiar distortion is clearly demonstrated, the organ restored to its position in health, and the cervix and anterior labium become evident, which on the first digital examination was not felt protruding, as is usual, into the vagina, but lying, as it were, above the superior wall of the canal. At a late interview with Dr. Ferguson, the talented ex-professor of midwifery, of King's College, he informed me that he had frequently observed this kind of displacement, and

I am indebted to his kindness for introducing me to a lady, the subject of this affection, who is now under our care. With this exception, I am not aware that this, by no means rare condition, has been observed by any former writer.

Dr. Denman, who was the first British author to describe retroflexion of the uterus, as distinguished from retroversion, says, that he had seen only one case of the affection. The cause he considers to be retention of urine, existing at the time of delivery, and continuing unrelieved for some time afterwards. The torsion was easily removed after emptying the bladder by the catheter. Flexion and torsion of the uterus differ in nature, causes, and symptoms from both ante and retroversion. Flexion occurs much more frequently in the unimpregnated state. This observation has been confirmed by Professor Moreau, of Paris, who indeed was the first to *publish* it. And it is equally true, that retroflexion is not only a very common affection, but that it is much more common in the unimpregnated state than retroversion is in the impregnated; and this observation is confirmed, I believe, by the experience of Drs. Simpson and Rigby. There is no doubt that flexion of the uterus has been, until even very recent times, confounded with not only morbid growths or tumours, but also with obliquity in which the os and cervix are displaced from their normal situations, the axis of the organ remaining straight. The essential difference, therefore, between flexion and version are—1, that in the former, the os and cervix preserve their normal position; and 2, the axis of the uterus in flexion is curved—straight in the forms of obliquity. This at least is the usual rule. The diagnosis of retroflexion from retroversion is difficult, especially in chronic cases, if we trust to the common modes of exploration.

[By means of Simpson's uterine sound, however, the diagnosis, as Dr. Smith remarks, is perfectly easy.]

Retroflexion may occur even before the age of puberty; it is, however, more common after menstruation is established; or it may come on, as in Dr. Denman's case, after labour. Under the latter circumstances, the cause may be irregular contraction of the uterus; partial softening; cicatrices of the mucous membrane, and tumours, adhesions of the uterus to surrounding parts, &c.; but I believe by far the most common cause—indeed, I consider it the usual cause—is interstitial deposit and subsequent organization in the uterine walls.

The usual symptoms of retroflextion of the uterus are shooting, dragging pains in the uterus, rectum, loins, groins, hips, and down the thighs, more or less dysmenorrhœa and menorrhagia, or amenorrhœa, leucorrhœa, hæmorrhoids, and irritation about the rectum, tenesmus and difficulty or distress in menstruation, constipation attended by a sensation as though the bowels were prevented from acting by a heavy body pressing and obstructing the rectum, followed by anorexia, dyspepsia, and a train of deranged functions of all the organs of the body; and when the disease has continued a long time, not only does the countenance betray in a peculiar manner the existence of an important malady, but the mental powers become influenced and even impaired; the intellect and temper often show the pernicious influence of this disease, and marked relief in this respect is not only frequently produced for the sufferer by proper treatment, but is equally obvious to her friends. In these introductory observations, I shall content myself with general considerations, and in a future contribution shall hope to enter more into detail.

The irritation about the rectum is much more marked in retroflexion, whilst the bladder is more involved in anteflexion. This is what might have been expected à priori. Sterility or frequent abortion are apt to supervene on retroflexion in the married female. Dr. Simpson, in his papers entitled "Contributions to the Pathology and Treatment of Diseases of the Uterus," has asserted that in uterine diseases the common or general symptoms (those just enumerated) will only enable us to "localize the *seat* of the affection, but are insufficient to specialize its exact nature." In this opinion I fully coincide. It is especially true in reference to retroflexion. Any or even all of the symptoms may be absent; and if all are present, they are totally insufficient to enable us to say more than that *something* is the matter with the uterus. We often find that the general symptoms do not bear any fixed or uniform ratio to the extent or duration of the disease. Perhaps the most constant symptoms of uterine flexion are pain and dragging, dysmenorrhœa, menorrhagia, leucorrhœa, and rectal or vesical irritation, followed by bad health.

I shall not insist upon these symptoms, as, our suspicions being aroused by them, we are enabled to diagnose the affection with *perfect* certainty. The means of diagnosis are—1, tactile examination per vaginam, per rectum, and through the abdominal walls in the hypogastric region; of these three modes that per vaginam gives us by far the most valuable information: 2, the use of the speculum: 3, Dr. Simpson's uterine sound. As I have already said, it is to the invention of this last named instrument that the profession is indebted for almost all the knowledge we possess of retroflexion, but above all to the facility and certainty of its diagnosis.

I will concisely describe the mode of conducting the three forms of exploration which I have enumerated. 1. The examination per vaginam may be performed, the patient being in both the vertical and recumbent posture. As a general rule the position occupied by women in this country during parturition, namely, on the left side, with the legs flexed on the abdomen, will be found by the British practitioner to be the best for examining by touch per vaginam. Obstetricians are better accustomed to the disposition of the parts in this position, and the deviations from the usual condition of the organs are thus more easily recognised, whilst the feelings of our patients are not outraged, as I have known them to be when the plan which is followed by our continental brethren (lying on the back) is proposed or insisted on. Previously to the examination, we should empty both the bladder and rectum, as otherwise we may mistake the retroflected fundus uteri for a mass of hardened fæces, or vice versâ. Upon passing up the finger we feel the os and cervix in their normal position, and immediately behind them a hard globular substance. This is the fundus. In most cases we may trace the continuousness of the fundus with the cervix, as the finger may pass over the knuckle or angle formed by the flexure. This is more easily accomplished when the fundus lies very low down, below the os. It is remarkable that when recent, the extent of the retroflexion will vary from time to time in the same case, so that the connexion of the tumor with the cervix may be easily ascertained at one visit, and with great difficulty at another. Though the os and cervix do not suffer any displacement, the latter may be, and frequently is, hypertrophied, or presents to the touch certain knots or nodules, varying in size and number, which often wholly disappear, and are generally rendered less distinct by the introduction of the uterine sound and restoration of the cervix to the normal position. In some cases the utero-vesical layer of the peritoneum is so tense as to bring the fundus of the bladder low down in the vagina, or even to induce partial hernia of the bladder; whilst in others this displacement is attended by a hardened and thickened feeling of the anterior wall of the vagina, which disappears after the restoration of the displaced fundus. Occasionally also the urethra is drawn up, feeling like a tense cord gradually lost in the contiguous vagina, whilst its orifice is retracted within the arch of the pubis. The examination, per rectum, is a valuable aid to that per vaginam, as from being able to pass the finger much higher up (from the obvious reason that its progress is not obstructed by the presence of any body closing the canal) we may frequently feel the solid globular body of the fundus. In addition to this advantage we can, of course, ascertain with certainty the absence or presence of scybalæ, and thus correct or verify our first impression. The examination through the abdominal walls is of little value except in cases of anteflexion, and then only in patients of lax fibre and spare habit, and of the curve, to enable the finger to judge of its having passed to its full extent. The natural length of the cavity of the uterus is two and a half inches, and it forms a slight curvature forwards and upwards. The sound is passed with greater ease than the catheter, and produces less uneasiness than that instrument, certainly much less than the passage of a catheter in the male subject. The mode of passing it is as follows:—The patient is placed on the left side with the knees drawn up; the forefinger of the left hand is then introduced to find the os uteri; having done so, the sound is passed; held lightly between the finger and thumb of the right hand, along the forefinger, and guided by it, is insinuated into the os, and gradually and gently pushed along the cervix into the cavity of the uterus; in some cases the canal of the cervix or the os internum is so small as not to allow it to pass; it must then be first dilated.

The application of the uterine sound has opened a new era in the history of uterine diseases; by its means, cases before imagined to be malignant affections of the os and cervix uteri have been proved to be nothing more than extreme congestion, produced by retroflexion of the fundus—long standing affections pronounced by eminent men to be incurable; fibrous tumours have been demonstrated to be retroflexions, and removed by restoring the fundus to its natural situation; whilst other tumours, of whose connections it was difficult if not impossible to be certain, have been shewn to be ovarian and unconnected with the uterus. But time will not permit me to enter into the numerous applications and uses of the uterine sound.

We must now proceed to inquire what are the symptoms produced by this displacement, and the causes which lead to it?

In some cases no appreciable symptoms are produced, except perhaps a greater flow of the menses, and a greater tendency to abortion to the married female, whilst in others the symptoms are exceedingly distressing and complicated. It is in most cases difficult to trace the first origin of the affection, but in some instances in which diligent inquiry has succeeded in doing so, the patient would appear to have been cognizant of some depression or falling down of the body of the womb, sometimes occurring suddenly, in other instances more gradually progressing, in the former producing alarming sympathetic affections, as nausea and vomiting, and actual syncope, together with more or less pain referred to the groin or sacrum. The retroflexion increasing or becoming permanent, produces some pain or difficulty, or frequency in micturition, though it never leads mechanically to retention of urine. The patients complain likewise of a dull aching constant pain in the sacral region, probably arising from the pressure of the fundus on the sacral nerves, since it is often immediately removed on raising the fundus; the pain often shoots down one of the thighs, there is also a sense of weight and bearing down towards the rectum, much increased in the act of defæcation. Advice not being sought at this period, or the displacement being overlooked, other more serious symptoms manifest themselves; menstruation becomes highly painful, the discharge is generally increased in quantity, and clots and shreds denoting irritation are voided,—in short dysmenorrhœa is set up. In the intervals an abundant leucorrhœal discharge is usually present. These symptoms cannot exist without the patient's general health suffering more or less; the stomach, which has an intimate sympathy with the womb, becomes disordered, the appetite is capricious and irregular, the tongue loaded, and the bowels constipated, the patient's spirits are depressed and irritable, and a variety of nervous hysterical affections are apt to occur. Such symptoms as these though they do not prove the existence of a displacement of the womb, yet evidently localize the affection there, and warrant further examination per vaginum, which alone can enable us to determine with certainty the existence of this displacement, and to rectify it.

In examining a case of retroflexion of the uterus during life, the finger can frequently reach a firm globular mass, situated behind the cervix uteri, between the rectum and vagina; this is the fundus uteri, which is ben downwards and backwards, the os uteri instead of being forcibly dragged upwards and forwards behind the symphysis pubis as in retroversion, is little, if at all, removed from its natural situation. At first we may not be able to determine this globular mass to be connected with the uterus at all; it may appear to be merely a scybalous collection in the rectum, hence we should always if possible, before examining a patient, prescribe an aperient or an enema to remove this source of error. In other cases the tumour may be too high up to allow the finger to trace its continuity with the cervix, whilst in others again, the point of the curvature being low down, the fundus is much below the os uteri, and its continuity is easily traced by the experienced finger.

The exact position of the retroflexion varies considerably in different individuals, and even in the same individual, at different times; the point of curvature may be so high up that a very small portion of the fundus is all that is bent down. On examination per rectum, we feel the same globular mass through the anterior wall of the intestine, and being able to reach much higher up in this direction than per vaginam, we can frequently verify or correct our first impression.

It is, however, by the use of the uterine sound, that we can obtain sure and valuable information of the displacement of the womb. In a case of retroflexion, on passing the instrument in the natural direction upwards and forwards, it becomes almost immediately arrested; but on turning its point in the contrary direction, backwards and downwards, it will pass along the cervix uteri, and then glide downwards and backwards to its full extent of two inches and a half. The point can now be felt distinctly in the centre of the tumour, through the posterior wall of the vagina, or the anterior of the rectum, thus proving it to be the fundus uteri in this unnatural position. Nor is this all, by turning the instrument gradually and gently round, so as to bring the point upwards and forwards, at the same time assisting the elevation of the fundus with the forefinger of the left hand, we shall find that the tumour disappears, it can no longer be felt, the fundus is restored to its natural situation, and retained there by the sound within it; the patient will often be immediately relieved from the constant pain and uneasiness from which she has previously suffered in the sacral region.

In some instances the mere restoration of the fundus to its position is sufficient; it remains there permanently, even after the withdrawal of the sound; in others for a short time only; but in many cases, especially in those of old standing, the disposition of the fundus to return to its unnatural position is so great, that it requires the handle of the sound to be held pretty firmly to prevent its turning round, and as soon as the sound is withdrawn, the fundus again retroflects, and we can again trace the tumour as before.

The examination and passage of the sound produces in many instances little or no pain, until we elevate the fundus, when the instrument, pressing on the ovary, which we shall afterwards see is extremely apt to become congested and inflamed in consequence of the displacement, occasions severe pain, which, however, immediately ceases on our completing the restoration. In the examination per rectum, the pressure of the finger on the fundus above occasions no pain, but if we elevate it, the patient immediately complains, and by passing the finger beyond the depressed fundus, we can discover the exact seat of pain to be the posterior and upper part of the fundus, in the situation of the ovary, which we can often feel as an oval body. These last symptoms are dependent on the inflammation of the ovary, and cannot, therefore, be regarded as essential to retroflexion of the uterus, but as the consequence of a complication. It occurs, however, sufficiently often, to render it advisable in all cases of oophoritis of long standing, to examine carefully into the position of the uterus.

Provincial Medical and Surgical Journal, Jan. 12, 1848, p. 10.

[The predisposing causes of retroflexion are congenital formations of the uterus, increased capacity of the pelvis, relaxation of the ligaments and frequent abortions. Exciting causes are, accumulations in the bowel, violent exertion, straining at stool. &c. As to symptoms, Dr. Hensley observes,—]

In all cases where the fundus has remained displaced for some little time, congestion and engorgement, not only of itself, but of the cervix and os uteri, is produced, owing to the return of the venous blood being retarded; this congestion is occasionally so great as to lead even experienced men into the belief that malignant disease of the os and cervix is present, or that the retroflected fundus is a fibrous tumour. The cause being overlooked, and the congestion continuing, ulcerative inflammation of the cervix is apt to be set up, and a long train of severe symptoms ensues, such as pain and heat in micturition, bearing down, leucorrhœa, the discharge being yellow and thick, occasionally tinged with blood, and other symptoms too numerous to enter into. The relations of an organ whose sympathies extend through the whole female frame, insomuch that some writers have considered it the centre of female nervous sympathies cannot be disturbed without generally producing many sympathetic affections, among which we may class nausea, vomiting, spasm, and the protean forms of hysteria.

[Oophoritis is a frequent complication of retroflexion; is marked by pain, heat, and tenderness in the region of the affected ovary, and lameness of one leg, which is kept flexed on the abdomen; sometimes too the swelled ovary may be felt per rectum or per vaginam. In the treatment of retroflexion, we must unload the bowels by saline aperients, and then give alteratives and tonics; while we relieve the local engorgement by leeching the anus or os uteri, and the use of the hip bath. Then we must replace the fundus by the uterine sound, keep the patient in bed for some days, and let her use astringent injections. Dr. Hensley remarks further,—]

Should these means fail, we must employ the uterine supporter devised by Professor Simpson. It consists of a metallic or ivory pin, the length of the uterine cavity, (two inches and a half,) fixed in a disc or button, on which the os uteri rests, connected with and kept in position by a little frame resting on the mons veneris, and which is properly fastened with tapes. Dr. Rigby improved this instrument by making the pin flat instead of round, and broader at the extremity, so as to adapt it to a larger surface, and by employing ivory instead of metal. Dr. Simpson has removed the objection of corrosion being produced by the secretions, by having the metal electro-gilded. The instrument should be adapted while the patient is in bed, and she should be kept quiet for some days, till the uterus becomes accustomed to its presence. I have known peritonitis induced by the neglect of this precaution, the patient having walked home some distance; where, however the patient is cautious in her movements, and disposed to follow the directions of her medical attendant, the instrument may be worn for months without inconvenience, and excites less irritation or discharge than the ordinary pessaries. The instrument is generally required to be worn a month or six weeks to effect a cure; after wearing it a short time the patient is able to take moderate exercise. Dr. Simpson has another instrument for the same purpose, it is a species of pessary, to which he has fixed a hinge, by means of a spring, like the blade of a knife.

Provincial Medical and Surgical Journal, Jan. 26, 1848, p. 34.

146.—CASE OF RETROVERSION OF THE UTERUS DURING PREGNANCY.—

By Dr. J. Seddon.

[The patient was 38 years old, and six months advanced in her pregnancy, when labour pains came on, and after they had continued some time, and the liquor amnii had been discharged three days, Dr. Seddon was sent for. The os uteri could not be felt, while the uterine tumour filled the pelvis and almost bore on the perineum. Dr. Seddon says,—]

The case appearing to be one of retroversio uteri, and the patient in the six month of pregnancy, we decided to attempt the replacement of the uterus. For this purpose our patient was placed on her knees, at the lower end of the bed, her hands resting on the floor. I then introduced my hand into the vagina, behind the tumour, and made pressure against it, but could not succeed in moving it out of the pelvis. Pressure on the tumour through the rectum had no better effect.

As our patient had no urgent symptoms, and the pains were not violent, and as she passed her urine freely, we decided to wait till the pains became stronger and more frequent, and then, if occasion required it, to endeavour to introduce the hand into the uterus, and bring down the fœtus. An opiate was to be given occasionally, and the bowels kept regular by castor oil and injections.

On the 29th of January, the pains having become urgent, and a portion of the unbilical cord having passed through the os externum, there being no pulsation in the cord, it was decided at once to attempt the delivery. With some difficulty I introduced my hand up the vagina, behind the os pubis, and by perseverance succeeded in passing it through the os uteri, when one of the feet, which presented, was felt and brought down, and the delivery of the fœtus easily completed. After waiting some time, the hand was again introduced, and the placenta brought away. This operation, however, was not very easily effected, as the vagina and uterus formed an acute angle with each other, and the placenta attached to the fundus uteri, which still remained low in the pelvis, was reached with difficulty. A gentle attempt was now made to replace the uterus, but without success.

The first few days after delivery the patient had some pain and tension of the abdomen, which were easily subdued, and she slowly recovered her accustomed health. Seven weeks after the confinement an examination was made, and the uterus found still retroverted. An attempt was again made to put it in its proper position, which proved unsuccessful. I did not make use of the uterine sound at this time, because I was not acquainted with its invention and application to displacements of the uterus, though I had previously made use of the flexible metallic catheter to explore the uterus, in suspected diseases of that organ. Whether the sound would have been successful in this case or not, remains a conjecture. I am, however, inclined to the opinion, that the displacement might have existed for a long time, and the organ become accommodated to its altered position, thus rendering its adjustment the more difficult. This case, perhaps, may possess some additional interest, inasmuch as it shows that the hand (a small one at least), may be introduced with safety into the uterus at the sixth month of pregnancy, for the purpose of delivery.

Provincial Medical and Surgical Journal, April 19, 1848, *p.* 205.

147.—NEW INSTRUMENT FOR PROLAPSUS UTERI.

[Dr. James Reid, Physician to the General Lying-in-Hospital, has] Contrived a new instrument, which he calls the "womb supporter." It is formed of two separate steel springs, very narrow at the ends by which they are joined together; the free extremities being each one inch and three quarters broad, convex externally and concave internally, so as to admit of cork being attached to it; and the whole being covered with elastic gum, it has no sharp edge. The two narrow ends of the springs are fastened together by an intervening piece of ivory or wood, so formed as to allow the broader extremities to separate from each other to the extent of two inches and a quarter at their outer surfaces. The two free ends are passed together when introduced into the vagina, and are then allowed to expand,

and to become applied to either side of the cervix uteri. The instrument is then gently pushed up, until its narrow end is at the vulva, thus raising the womb with it at the same time. (A second form of the instrument has a contrivance by which the ends can be easily drawn together, and the introduction as well as the extraction of the instrument facilitated). A button is fixed to the connecting piece of ivory, and to this button a loop of vulcanized india-rubber is attached, through which a T bandage, ribbon, silk handkerchief, or other guard, can be drawn, and attached to the stays before and behind, for the sake of security, although in some cases the author has found the instrument requires no aid of this description. This instrument does not exert much lateral pressure on the vagina, and does not produce pain. The patients find no difficulty in its introduction and removal, and it is effectual in relieving the symptoms caused by prolapsus.

Med. Gaz., May 5, 1848, *p.* 774.

148.—NEW INSTRUMENT FOR PROLAPSUS UTERI.—By M. Dubois.

This is a little ivory funnel introduced into the vagina to receive the neck of the uterus; its lower end is received into a little metallic cup which is movable and attached to two flexible steel arms, one of which passes behind the anus, and the other in front of the vulva, and confined by a bandage that surrounds the pelvis. This pessary has the advantage of being moveable; it does not constrain the wearer, and as she is able to remove it at pleasure to cleanse it, the many causes of irritation are thus avoided. Some are unable to wear it comfortably; no doubt, however, this may be accounted for by a morbid sensibility of the organs of generation often observed.—*Jour. de Med.* *Dublin Med. Press, Nov.* 24, 1847, *p.* 324.

149.—CASE OF POLYPUS UTERI.—By Dr. T. R. Mitchell, Master of the South-Eastern Lying-in-Hospital, Dublin.

[The polypus was about the size of an orange; it lowest part touched the perineum, and it was found to be attached to the cervix uteri: the pedicle contained two pulsating vessels of considerable size. Dr. Mitchell says,—]

On the 28th October, assisted by my friend Professor Beatty, I proceeded to encircle the neck of the tumour with a ligature, for which purpose the speculum was first introduced, which much dilated the vagina, and simplified the operation.

The double canula of Gooch was used, having the windlass attached, and the ligature was made of silk salmon line, well waxed, and armed at either end with a piece of thin wire, of about a foot in length. This method of attaching wires to the ends of the ligature suggested itself to me, in consequence of the trouble and difficulty I have experienced in passing the ends of the wire through the lower part of the canula. When the tubes were adjusted (which I am happy to say answered the purpose admirably), after some little difficulty I succeeded in passing the ligature round the neck of the tumour, and proceeded to tighten it with the windlass. Unfortunately, it snapped across, and I was compelled to knot it (not having another with me), and re-encircle the pedicle. Having accomplished this a second time, the instrument was attached, and the lady directed to be kept quiet. Nothing untoward occurred until the 30th, being forty-eight hours after the operation: and as she had complained of pain in the hypogastrium, the ligature was not tightened. On this morning, however, a small quantity of blood was observed to trickle from the vagina, and the ligature was tightened considerably, in the hope that the bleeding would be checked. This did not succeed in effecting the purpose, and the hemorrhage became more profuse towards evening. A concentrated solution of alum was now injected into the vagina, by means of a gum elastic bottle, and the bleeding was diminished. On the 30th, six p. m., the patient was very weak from loss of blood, the bleeding having profusely continued the whole night; she had not slept, and became much alarmed. The discharge from the vagina was of a blood-red colour, but rather fœtid; her pulse was small and weak, but very quick —110; she complained of giddiness, and pains in the head, and imagined something was floating before her eyes. Wine, ammonia, and camphor were freely given, and the ligature was tightened as much as it would bear. I then proceeded to plug the vagina with pieces of soft calico, and administered a full opate. At ten, a. m., the system had rallied much, and the patient was more composed. The bleeding, however, still continued, trickling down the instrument, which, I perceived, acted as a means of conveyance for it through the centre of the plug. I consequently determined upon removing the pieces of calico, and substituting sponge; accordingly, I filled the vagina full of the latter substance, which I found completely to embrace the canula. At six, p. m., the patient was much better, a very slight oozing of blood only continuing—felt stronger,—pulse 100,—complained of pain in the region of the bladder, which was relieved by passing water. Ordered the wine and opium to be continued, with beef tea. On the 31st, at nine, a. m., the patient felt in good spirits, had slept well, and there was no bleeding of any consequence; her pulse was full and strong, being at 80. I tightened the ligature without removing the plugs, and continued the wine, with beef tea, &c. Nov. 1st.—the patient still improving; a fœtid fluid oozing from the vagina, I withdrew the plug, together with large coagulæ. I then syringed out the vagina with the alum solution, which was returned of a very florid colour. The plug was again introduced, and the ligature tightened. On the 2nd, the report was the same as before, with the exception of slight pain and tenderness, on pressure, in the hypogastrium; the abdomen was ordered to be stuped. As there had been no evacuation of the bowels since the day of operation, an enema was administered. The ligature was again tightened, and the plug withdrawn, and a fresh one introduced. On the morning of the 4th the canula came away, bringing with it the wasted polypus, which was so tightly embraced by the ligature, that it required to be cut before it could be separated. The withdrawal of the instrument was attended by no pain or hemorrhage, a slight oozing of reddish and fœtid serosity only occurring, which was replaced by pus on the three following days. The patient was ordered quinine, wine, and every kind of nutriment, and on the 7th was removed to the sofa in her drawing room. She has since rapidly recovered, and is now quite well.

[Dr. Mitchell remarks, that of the three modes of extripating polypi, torsion is only applicable to small soft vesicular tumours; excision he has never used, always preferring the ligature. On this he says,—]

In using the ligature, I think the plan of fixing the wires to its ends most valuable, and need not impress upon practitioners the necessity for applying the noose as close to the bulbous part of the tumour as possible, lest a portion of the uterus be encircled by it. This point is well urged by Gooch, who also says, that the part of the pedicle attached to the uterus afterwards falls off, in the same manner that the funis separates from the umbilicus of the child after birth. If the ligature be properly applied, in the great majority of cases no pain will be felt; but it is thought that in *every* case where pain is felt, that a part of the uterus must necessarily be strangled, and that the ligature ought to be loosened, or if necessary removed. As to the latter practice of loosening the ligature, no one could question its utility; but I am quite convinced, that you may have considerable pain felt, although no portion of the uterus is touched; 'tis true, that the polypus contains no nerves, and therefore is insensible, but every one is aware, that as soon as the ligature is tightened, that the tumour becomes congested and swollen, owing to the free exit of the fluids being checked by the ligature; the blood coming to the tumour is also arrested; both which causes, acting upon so sensitive an organ as the uterus, may give rise to pain in the hypogastrium. Numerous cases are on record where the patient has died from peritonitis, almost immediately after the ligature has been applied; but in those cases I have no doubt that the uterus was injured. The practitioner, however, ought to be on his guard, and if he find that the pain continues after the application of a warm stupe to the abdomen, and using the catheter if necessary, he ought at once to loosen the ligature; and when tightening the cord, he should recollect that this may be necessary; and be careful not to pass *both* ends over the projecting screws attached to Laundy's windlass, but merely to fasten one to the eye at the extremity of the instrument, and tighten with the other: he can then easily slacken it as much as he wishes, a thing very difficult to accomplish when both are tightened.

There is one important symptom attendant upon this case which it is necessary to allude to, viz., the vast amount of blood lost, in which it forms a remarkable exception to the general rule, not only as to the quantity, but also the source; it is the opinion of some of the best authorities, that the uterine surface is the source from which the blood flows, when that disease is present. In this opinion I cannot coincide, as I am convinced that the blood (in this case) came from the vessels of the pedicle, as it was partially arrested at each time that the silk was tightened. The plugging proved most efficacious in stopping the hemorrhage; and I had determined, in the event of its failing, to twist off the tumor, with the canula attached, and apply caustic to the surface, or if necessary the actual cautery.

British Record, Jan. 1, 1848, p. 30; and Feb. 1, p. 63.

150.—ON POLYPUS UTERI.—By DR. LOCOCK, First Physician-Accoucheur to the Queen.

[Cases sometimes occur in which a very small polypus, not larger perhaps than a pea, gives rise to severe hemorrhage. In such a case, which occurred to Dr. Locock,]

By examination, the tip of a very small polypus was discovered considerably within the cervix. From its situation and small size, it appeared impossible to remove it. Some weeks afterwards, the author was called to see the lady some distance from London, in consequence of the hemorrhage having been alarmingly profuse. He found her with a bloodless countenance, and a most feeble, flickering pulse; and it seemed evident that if the hemorrhage continued she could not much longer survive. The polypus was still so far out of reach, that all attempts to catch hold of it by forceps or hooks entirely failed; but the author succeeded in picking off or digging through the polypus with his finger nail, and the patient perfectly recovered. He has since met with four cases of a similar character. In all, the peculiarity existed, that the small polypus could not be detected, except during the attacks of hemorrhage, at which times the os uteri was found open and flaccid. It was with exceeding difficulty and after many failures, that the author succeeded in removing the polypus in three of these cases. But he often felt that if he had a finger nail long enough, strong enough, and sharp enough, he might scoop away the polypus, as in the case of a medical friend's wife. He therefore had an instrument made, which is simply a very small, fine, and sharp scoop, like a carpenter's gouge, enclosed in a canula, either to remain entirely within or made to protrude beyond the sheath, the length of the protrusion being regulated by a screw at the handle. This instrument is passed through the os uteri, its cutting edge is pressed against the base of the polypus, and it is then worked gently half round and back again once or twice, till it has cut through the object. The author then offers some remarks on polypi of larger size, recommending their removal by excision rather than by ligature. Before excision, he twists the polypus round several times, so as to produce torsion of the arteries. In very large polypi, it may, perhaps, be better to apply the ligature first, and after two or three days, when the circulation has become well strangulated, to cut through the neck of the polypus above the noose. When the polypus, though quite within reach of the touch, is too small to be noosed by a ligature, and baffles the operator in attempting to seize it with forceps or hooks, the difficulty vanishes if a bivalve speculum be used to bring the polypus within sight. It can then be snipped off with a pair of curved scissors, with or without the assistance of the forceps, the cut surface being afterwards touched with nitrate of silver. Lastly, the author noticed the circumstance that a large polypus may exist, even of the size of a fœtal head, without the usual symptoms, hemorrhage or leucorrhœa, being noticed—its presence being discovered through its pressure on the bladder leading to the necessity of the catheter.

Dr. Locock said that the instrument was directed into the os uteri, and passed into the cavity of the organ. In its passage it cut through the base of the polypus, and removed it. He did not apprehend any ill consequences from wounding the uterus, for there was no organ of the body which could be wounded with more impunity than the womb in its healthy state.

Medical Gazette, May 5, 1848, *p.* 773.

151.—NEW MODE OF APPLYING LIGATURES TO POLYPI.—By M. Favrot.

The recommendation of this method is its great simplicity. M. Favrot takes two gum elastic catheters, of convenient size, and cuts off the end of each just below the eye; he then doubles a piece of silk, of necessary length, and inserts the loop into one catheter, the two ends joined or not, into the other, and brings each extremity out of the lower end of the catheter. This being arranged, the next step is to separate the two threads between the upper extremities of the catheters, and to pull one down in the form of a loop, leaving only one above, which is carried up to the pedicle of the tumor. The application then is as follows:—

The catheters or sounds, together with the interposed thread, are carried up to the base of the tumor, the loop of the thread which has been pulled down being held on each side with the respective catheters. This being done, the said loop is allowed to pass over the tumor, the two catheters being transferred to the same hand; all that is required is then to tighten the thread by drawing its two ends, when as is readily seen, the loop glides out of the other sound, and encircles the pedicle of the tumor.—*Revue Medico-Chirurgicale*, Janv. 1848. *Prov. Med. and Surg. Jour.*, *April* 19, 1848, *p.* 230.

152.—REMOVAL OF A LARGE FIBROUS TUMOUR FROM THE UTERUS.—By Dr. Simpson.

[The patient, who was 46 years of age and had born ten children, had been subject for two years to very severe floodings, recurring every fortnight, We are told that]

Dr. Simpson found, on examination, a large fibrous tumour imbedded in the back wall of the uterus, and which protruded downwards upon the top of the vagina in a rounded form, the os uteri and uterine cavity lying in front of it—as ascertained by the uterine sound.

Dr. Simpson, (accompanied by Drs. Malcolm, Zeigler, Weir, and Keith,) made an opening, by means of caustic potass, into the most prominent part of the tumour, about one inch behind the os uteri. It extended through the layer of uterine substance, and into the mass of the tumour itself. On passing up the finger into the hole thus made, it was found that it could be passed easily between the substance of the tumour and the uterine wall. The tumour, in fact, seemed to be very loosely connected with its uterine envelope, and could be separated from it with great ease as far as the finger could pass between them. Two days after the caustic was used, Dr. Simpson found the artificial opening enlarging like the os uteri in labour, and the tumour beginning to protrude through it. It opened up gradually, the patient taking some ergot, and on the fifth day a large piece of tumour was found pushed low down into the vagina, while the edge of uterine wall could barely be felt, encircling it like the rim of the os uteri when fully dilated. The abdominal tumour had subsided considerably. On the eighth day, Dr. Simpson attempted to pass a ligature round the mass, but found it could not possibly be made to include but a very small portion. He separated, however, and brought away a small fragment, not without giving a good deal of pain. The tumour now gradually and more completely filled the vagina. The uterus, however, seemed unable to throw it off entirely, and the patient was getting exhausted from the quantity of the discharge, which was very fetid and offensive. On the 12th day, Dr. Simpson, while she was completely under the influence of chloroform, passed up his hand by the side of the tumour, completed the separation of the remaining adhesion (like an adherent placenta), and brought away the tumour in one mass. This was done in a very few minutes. The patient awoke up quite quietly, said she had felt no pain whatever; nor did she complain at all of pain in the region of the uterus subsequently. She proceeded very well for three days, her pulse not above eighty; when, in consequence of her nurse taking unwarrantable liberties with her in making her get out of bed, washing, &c., she was seized with rigors, followed by severe sore throat and irritative fever. This completely exhausted her remaining strength and she died six days after the tumour was removed. The body was examined by Dr. Bennett, Dr. Scott, Dr. Simpson, and Dr. Keith. The peritoneal surface of the uterus was perfectly healthy, and showed no trace whatever of inflammatory action. The cavity in the back wall, in which the tumour had been imbedded, was much reduced in size, and appeared to be tending to a healthy cicatrization.

The tumour weighed three pounds eight ounces when removed. It must have been somewhat heavier, as the great discharge for several days was no doubt from partial softening and decomposition of the tumour. Various French surgeons had cut down upon such tumours, and enucleated them by instruments, or by the hand. In the above case, Dr. S. had merely formed an artificial opening into the uterine cyst (as it were) containing the tumour, and then allowed the uterine walls which are hypertrophied around such masses (exactly like the uterus in pregnancy), to push down and expel the foreign body. It was, he believed, the first time this new operation had been performed, and the largest fibrous tumour ever yet enucleated. The tumour, on division, was shown to be the common fibrous tumour of the uterus. *Monthly Jour., March, 1848, p. 695.*

153.—ON CERTAIN FORMS OF HEADACHE IN FEMALES.—By Dr. P. Murphy.

[There is a form of headache frequently met with in females, during the menstrual periods, and attacking mostly the left side of the head:—]

The pain, says Dr. Murphy, is intermittent, shooting, and lancinating; may be fixed for days, and is most severe at the temple (when it is termed clavus hystericus,) and next at the parietal protuberance and occiput: it proceeds from the sub-occipital nerve, and, if the exit of the nerve is pressed upon, pain more or less severe is complained of, extending along the whole course or at certain sites only of the nerve—as at the temple, nape of the neck, parietal protuberance, &c.: it is usually increased during the menstrual period, and is generally a complaint of unmarried females between the 33rd and 35th years of life, and is indubitably a form of hysteria. The menses are usually profuse or difficult, the bladder irritable, and there are ill-defined painful sensations about the pelvis; other forms of neuralgia often co-exist. The irritation of the sub-occipital nerve must be traced to the ovaries, being only present where these exist, and while capable of fulfilling the function of menstruation; and our treatment must be primarily directed to remove any congestion or irritation of these peculiar organs, and secondarily to lessen the pain of the nerves. The author advises the daily use of hip-baths or sea-bathing, where possible; attention to prevent accumulations in the rectum; abstinence from stimulants; mental employment; inf. valerian c. digitalis, with pills of assafœtida; occasionally general or only local bleeding; and when these fail, a gentle mercurial action, the cold bath being during the time omitted. As local means he recommends belladonna plasters, veratrine ointment, sinapisms, or blistering. Where, however, the patient is exhausted by leucorrhœa or profuse menstruation, with symptoms of chronic inflammation of the womb or ovaries, the treatment becomes more doubtful; but the author prefers the trial of a tonic treatment, and advises the exhibition of the valerianate of zinc and quinine, as especially efficacious, and the sulphate of iron in infusion of valerian when there are evidences of confirmed chlorosis.

This headache may be termed the *nervous* headache: it also assumes another form, which may be termed the *cutaneous* headache, and is the hemicrania of our forefathers: it seems to be located in the integuments of one half—usually the left side—of the head, which is so exquisitely sensible as scarcely to bear the least touch of the finger, and the pain never passes the mesial line.

Another form of headache is that arising from deficiency of blood within the cranium, and coming on after hemorrhages, exhausting discharges, or any other debilitating causes; the best examples occur in chlorosis. It is increased by the erect, diminished by the recumbent posture; is not a very painful form, but is often attended with impaired vision: its cause may be traced to diminished muscular power of the heart, which palpitates on slight exertion: there is also dyspnœa, pale face, and other symptoms of a feeble circulation, with a sinking pain at the epigastrium, and craving appetite. If the true cause of this headache is mistaken, and depletion used, paralysis has béen known to supervene, but if the debility be removed, the muscular power of the heart is easily increased; and the most useful remedies are, steel by itself or combined with quina, full diet, and the recumbent posture.

Another form of headache alluded to by the author arises from excess of blood, and may exist as a passive or congestive, or as an active or inflammatory state. The former, arising from the various known causes of congestion, is diagnosed by the constant heavy pain at the anterior part of the head, increased by the recumbent posture, sense of chilliness, slow feeble pulse, tendency to vomiting, and pain in the lumbar region, caused by congestion of the spinal cord. It is a dangerous form of headache, and has in the depressing diseases proved in a few hours fatal, but in other cases has lasted weeks without much mischief. The treatment should be to induce reaction as soon as possible by the warm-bath or an emetic. The author deprecated the usual attempts to arrest vomiting during the invasion of fevers. If the headache persists, with hot skin, leeches to the inner nares will be found of value, applied to the temple, they debilitate without relieving this pain of the head, and they are altogether inadmissible when this coexists with typhus or scarlatina. Blisters may also be applied, and diaphoresis produced by the usual means; cold applications to the head the author considered useless, and even likely to increase congestion. Care was also requisite that mere congestion should not by the use of stimuli be forced into inflammation, which is the next stage if resolution or fatal termination does not take place. The author regarded idiopathic phrenitis as a most rare disease, and hydrocephalus acutus as congestion, not inflammation. Phrenitis was well marked by the tensive pain increased on stooping, by the bright eye, hot skin, nausea, and vomiting, tendency to delirium, and occasional twitching of the muscles of the face; the most active antiphlogistic measures should be used.

There were other forms of headache easy of diagnosis, but of these the author would only mention the constant pain of head in children, with emaciation and want of sleep, and which diagnosed tubercles of the brain. The headache of pregnant females referred to the centre of the head, and attended with a remarkably slow pulse, and in which if bleeding is neglected, convulsions, abortions, and too often death, are apt to supervene; and lastly, the pain of the head occurring after a night's debauch, the cause of which, whether in the stomach or affected organ, the author considered not to have been sufficiently investigated. *Med. Gazette, Dec. 10, 1847, p. 1032.*

154.—CASE OF MONSTER.—By R. U. West, Esq., Hogsthorpe, Lincolnshire.

I was sent for on Sunday evening, August 15th, at about six o'clock, to attend the wife of Robert Garfit, a coach painter, residing in this village. It was her fifth confinement, and she had always had easy labours. She stated that she had had slight pains the whole of the day. Having ascertained, on examination, that the os uteri was well dilated, and having felt through the membranes one knee presenting, I at once directed my patient to go to bed.

When I came up stairs again, on examining again, I found a set of membranes still presenting, which I ruptured, and then I felt, besides the knee above mentioned, two feet, neither of which belonged to it; and, passing the finger higher up, I made out the foot belonging to the knee, and higher still, the toes of a fourth foot. My conclusion, of course, was that this was a case of twins, in which all the four feet had got down together; and that it was the other set that I myself had ruptured. Taking this view of the nature of the case, I did not anticipate the slightest difficulty; I passed my hand into the uterus till I reached the perineum of one fœtus, and, thus making sure that the two legs I proposed to bring down first belonged to the same body, I proceeded with the delivery of fœtus No. 1. These two legs came down with no more than the usual very gentle traction, till the knees had cleared the vulva, the toes being turned towards the os pubis, when I perceived that a greater amount of traction was gradually becoming necessary. As I could still feel the legs of the other child near the perineum, I considered that this unusual bulk by the side of, or rather behind, the buttocks of the one I was attempting to bring down, was sufficient to account for a little increase of difficulty, particularly as the body of the second fœtus appeared to be in front of the first, and had therefore crossed it. All attempts to push these feet out of the way were unavailing, for the obvious reason, as I thought, that there was no sufficient prominence which could hold them back. I continued accordingly to use more and more force, until I was well able to grasp both thighs with a cloth.

What was the cause of the difficulty that was now beginning to be of serious amount? I was forced to conclude that the fœtuses, by lying across each other, were somehow entangled. I now passed my left hand (the mother lying on her left side) along the back of the child, to reach, if possible, the cause of entanglement. I had hitherto been using the right. With considerable difficulty I succeeded in reaching the left shoulder, but could not feel anything unusual there. I, however, managed to bring down the arm. After this, by grasping the thighs with both hands, and using very considerable force in traction, I brought the fœtus so low that the cristæ of the iliac bones were all but external to the vulva; but all my efforts to bring the child any further down were fruitless.

I went to the foot of the bed, and introducing the left hand again by way of the perineum, I tried what I could do by grasping the body of the child above its pelvis, while with the other hand I pulled at the legs; but it was useless; and, although my thumb and fingers seemed to pass nearly round the child, I felt nothing unusual. The two fœtuses seemed jammed together. I began to think it would be necessary to let the other two feet come, in order to bring the cause of entanglement, whatever it might be, more within reach; but I durst not venture upon such a bold plan; for supposing the fœtuses to be separate ones, as was most probable, it would be unjustifiable, I thought, to do a thing so out of course as to allow the bodies of two full-grown children to occupy the pelvis at once. I was altogether so puzzled in mind and exhausted in body (my hands, with nearly three hour's incessant exertion, being so much cramped, that now and then I could hardly grasp anything,) that I determined on having the benefit of a consultation and of a second pair of hands. I felt also that a divided responsibility would be very desirable.

I therefore desisted from any further interference beyond an occasional examination during a pain, while a messenger fetched Mr. Gilby from Alford, a distance of seven miles. We then proceeded as follows:—While my friend held the legs of the fœtus enveloped in a napkin, drawn down as far as he could, I passed the blunt hook up along the back and endeavored to get a hold somewhere. As it would not hold by the shoulder, I forced it through the back close to the spine, and got a firm hold by one of the ribs. I may mention that the funis had been prolapsed more than an hour, and had long ceased to pulsate. By this plan—Mr. Gilby pulling at the legs, while I pulled by the blunt-hook—we, by using very considerable force, brought the body a little lower down, but we could not bring it away. The blunt-hook, having dislocated the spine and broken two or three ribs, began to tear out. It was therefore withdrawn, and I was searching for another place to fix it by, when I felt what, without sufficient consideration, I took to be the second arm attached to the body of the child already half born. Without giving myself time to reflect that it was too thick, down I pulled it. This was a leg. I could not have been deceived—it was certainly attached in some way to the same body of which the two proper legs had for some time been external to the vulva. I examined again, and made out this time plainly enough that the two fœtuses were united, and as far as I could reach I could not find out where they separated again. I directed Mr. Gilby's attention to this most extraordinary circumstance, which at once explained the immense difficulty we had experienced. There was nothing else for it now but to let both the bodies come together. They were united at the navel, abdomen to abdomen; and there was but one funis, which passed upwards into the two bellies at the point where the union commenced. Both were females.

We made several attempts with the flat hand passed along the united bodies to feel the neck, or, if there were two heads, the necks, with the division between them; for we could not tell whether there would prove to be but one head and one neck, or two. But until we had drawn both bodies down a little lower, we could not pass our hands high enough up. To make a little more room, while Mr. Gilby held the fœtuses as low down as he could, I passed my right hand up the back of the second fœtus, which, it will be understood, was lying next the os pubis, and with much difficulty succeeded in getting down its left arm, though I fractured the humerus in doing it. This done, we were enabled to draw down the bodies so low, that we could ascertain that there were in reality two necks, and consequently two heads. We now decided on separating the fœtuses. I therefore passed a bistoury, guarded by the forefinger of my left hand, as high up the union as I could do with safety to the mother, and plunging it in, brought it out again at the united umbilicus. We perceived that a large mass of liver had been cut into. This we tore away along with nearly the whole of the intestines belonging to both children. By so doing we diminished the bulk occupying the pelvis so much that we were enabled to draw the bodies down a good way further. I have said the blunt-hook had div ded the spine, and made a considerable hole in the back of the first fœtus; and now that an incision had been made, which opened its abdominal cavity, this child was so nearly in two, that at any rate it was not likely to be of any further use for traction; so it was cut off and laid aside.

It was now our object to bring the bodies low enough to enable us to complete the separation, and afterwards open one of the heads if it should be necessary. I therefore passed the blunt-hook up between the children, and got a firm hold at the top of the junction, and while Mr. Gilby, again grasping the pelvis of the second child, made powerful traction with both hands, I made equally powerful traction with the blunt-hook. After two or three efforts of this kind, a violent expulsive pain coming to our assistance, the two heads, to our great delight, came suddenly away together, and complete delivery was effected.

Now, it has been mentioned that there was only the body of the second child left to pull by. This kind of traction brought the head of that fœtus below the chin of the other, the extent to which they had been divided having enabled the remaining undivided portion to stretch sufficiently to admit of this favorable change of position. Thus the heads, in point of fact, passed through the pelvis one after the other.

There was a good deal of hemorrhage after the birth of the children, and in two or three minutes the one placenta was without any difficulty extracted. The labour was over a little before midnight. The perineum was uninjured, and the mother has recovered without a single bad symptom. The appearance presented was that of two perfectly formed and well-developed female children united from the umbilicus to the necks. They weighed, without the enormous liver and those portions of the intestines which were torn away, 11¼ lb. avoirdupois; and estimating the weight of the parts removed, and of the blood that was lost, at a pound and three-quarters, I think we may safely assume that they would have weighed, if entire, 13 lb., which is two pounds more than the average weight of twins, according to Burns. The union at the top was formed by a common sternum, or rather by the clavicular extremities of two sterna united end to end, and passing nearly straight across. This double sternum was very short, and would, if removed, have presented the appearance of a nearly square piece of bone with a clavicle at each of the four corners. A kind of raphé could be felt at the point where the bits of sternum joined each other. Below the sternum, on both sides, the true ribs were united by short pieces of cartilage, which ran straight across from the ribs of one child to the corresponding ribs of the other. The cartilages of the false ribs turned upwards, and were attached to the under part of the cartilages of the lowest true ribs.

The liver having been cut nearly in two, and torn away along with nearly all the intestines, it was impossible to ascertain the relative position of the parts in that portion of the abdominal cavity in which the sac of the peritoneum was common to both fœtuses. There was but one umbilical cord, and, as that was not at all thicker than the average, I imagined it possible that the children might each supply only one umbilical artery; but, on examining the iliacs in one of them, I found that each iliac sent off its artery in the usual way. The aorta of the other fœtus, having been cut in two in the situation where the blunt-hook had divided the spine, had been torn away along with both kidneys; but there could be no doubt that this child supplied two umbilical arteries as well as the other. The cord must, therefore, have contained four umbilical arteries; but for various reasons, which will be more apparent when I come to the description of the heart, I think it probable that there was but one umbilical vein. I regret that, when I was searching into these matters the day after the delivery, the whole of the funis, as well as the placenta, had been made away with by the nurse.

Attached to the under part of the raphé of the common sternum, which formed a kind of roof to the two chests, was a membranous bag extending across from side to side, and down to the diaphragm. On cutting into this, I found it was a pericardium containing a curiously shaped heart, common to both fœtuses. Passing the finger along the top of this heart, I found that its only attachments were at each side, the middle part for the space of about two inches being free. Flat and shaped like a kidney, it seemed to lie evenly between the two chests; but by stretching it downwards it assumed some obliquity, which I found was occasioned by the circumstance that each upper corner of the heart was connected with the right side of each fœtus. Each child had a complete pair of lungs, three lobes on each right side, and two on each left, the mediastina extending backwards from the centre of the common pericardium. Two thymus glands were attached to the under part of the sternum, separated from one another by the pericardium. Each fœtus had two kidneys, and the pelvic viscera in both were perfect and well developed. Although the liver was much torn and nearly cut in two, I was yet enabled to make out distinctly that it was a large one, common to both children. I could not find any gall-bladders, but probably there would be two; at any rate there must have been two ducts, one for each duodenum. The diaphragm was torn to shreds.

The heart itself is shaped like a kidney, and weighs exactly one ounce avoirdupois. On external examination it is found to possess the following peculiarities:—one enormous large auricular sinus having two openings into it at one corner, supposed to be the openings for a common superior and inferior *vena cava*; with five auricular appendages—one very large under the openings for the cavæ, two at the other corner, looking like another large one split in two, and two smaller ones near to each other, hanging down on the other front of the heart between the roots of the two aortæ—all these appendages, communicating internally with the large auricular sinus. An aorta at each side of the heart, and a single pulmonary artery having its root near, and passing under that aorta which is situated nearest the openings for the cavæ. These three vessels all furnished with semilunar valves. No traces of pulmonary veins can be found. Thus this heart may be said to consist of but one auricle for the admission of blood, and one ventricle for its expulsion by means of three arteries. It is evident, therefore, that though it might do very well to support *fœtal* life, even for both children, it could not have supported extra uterine life for more than a few minutes.

Now as there appears to be but one common auricle and one common pulmonary artery, is it not probable that the ascending cava of each fœtus, if they could have been examined, would have been found to have united in a common trunk before passing through the diaphragm? Is it not also probable that there was but one portal system? And one ganglionic system? But speculations of this kind, resting on probabilities, can hardly add to the interest of a case, in which the facts capable of demonstration are quite strange enough in themselves. *Medical Times, Nov.* 12, 1847, *p.* 92.

ADDENDA.

155.—ON THE ACTION OF COD LIVER OIL.—By Dr. Hughes Bennett.

Dr. Bennett believes that the therapeutic action of the oil is dependent essentially on its being a fatty matter, perhaps more easily assimilated to the economy than any other kind of fat. He thinks the views of Ascherson fundamentally correct, with this difference, that instead of oil and albumen uniting to form elementary cells, they only produce elementary molécules and granules, from which nuclei and cells are formed. To him it seems certain, that in chronic rheumatism and tubercular diseases, the albuminous compounds are in excess, and the oily compounds are diminished in the economy. The direct addition of the latter, therefore is the most rational method of supplying the wants of the system.

It may reasonably be argued, that if the theory of its action as fatty matter be correct, any other kind of oil would prove just as serviceable, and certainly there are many much more agreeable to the palate. Experience, however, has decided this question in the negative. The reason of this probably is, that continued doses of the purest vegetable oils, as that of the olive and almond, are more or less purgative, and thereby diminish, instead of improving the strength. It may also happen that the pungent properties of cod liver oil may have a favourable influence in retaining it on the stomach, and rendering it digestible. Lastly, it seems reasonable that an animal oil should be much more easily assimilated to the system than a vegetable one. Since the publication of Dr. Bennett's work on cod liver oil, in 1841, the chemical views of Liebig and others have come into notice, and it is a remarkable fact that they perfectly harmonize with the histological and morphological theory therein advanced. For, whether we regard the oil as a carbonized principle of the food, as furnishing an element for respiration, or as necessary to the formation of elementary granules in a nutritive blastema, it seems equally fitted to serve the end in view.

That a purely chemical theory, however, is defective is proved by the fact, that *every* carbonized material is not fit for the purpose. We cannot produce an increased nutrition in rheumatic or phthisical constitutions by alcohol, sugar, or starch, notwithstanding their chemical composition is so similar. The chemists may argue that these are converted into fats; and in the physiological condition so they are. In a pathological condition, however, when the digestive powers are enfeebled, this does not take place; and in giving an animal oil ready made, we save the alimentary organs the trouble as it were, of doing this. Hence, in constitutions which cannot digest food, or convert it into the oily element, the introduction of cod liver oil, in large doses, causes the necessary principle easily to be imbibed into the lacteals, where, uniting with the albumen, it constitutes the elementary granules so necessary to nutrition.

It is on this account, that in every disease of a rheumatic or tubercular nature, attended with impairment of nutrition, emaciation, weakness, &c., cod liver oil is directly indicated. It operates by imparting to the system one of the great elements necessary for the nutrition of the animal economy, in cases where that element is essentially defective. In the hands of the rational practitioner, it is destined to be an important means of curing a class of diseases, hitherto considered of the most dangerous and fatal nature. As our knowledge of morbid processes improves, as the microscope and organic chemistry open up to us the primary alterations producing lesions of the body, the great importance of attending to the part played by the oily principle, as one of the essential elements of nutrition will become apparent. Then when pathology is made the companion of physiology, and both constitute the foundation of a rational system of therapeutics, the use of cod liver oil will be found as beautiful in theory as it has already been found beneficial in practice. *Bennett on Cod Liver Oil.* Edinburgh, 1848, 8vo.

Monthly Retrospect 1848, May, p. 96.

156.—ON IODIZED OIL.—By M. MARCHAL.

This preparation has superseded the other forms of iodine at the Val-de-Grace. M. Marchal, reasoning from the fact of the virtues of cod liver oil being due to the small portion of iodine it contains, concluded that a far more useful preparation of this substance than the iodide of potassium is found to be, might be made by combining it with an organic body. In this way a more complete assimilation of the substance, or, at all events, its longer retention in the economy, might be secured. He chose an oily body, because this forming an emulsion with the bile, would allow of the substance being digested in the small intestine, and enable the stomach to become relieved of its presence. In this way, far larger doses can be administered, if requisite, without irritating the latter organ; while the iodine is eliminated by the urine much more slowly and in far less quantities than is the case with the iodide. The trials which have been made are very satisfactory in their results, the progress of the cure of buboes and other glandular enlargements being much expedited. The iodine is dissolved in fresh almond oil as wanted, in the proportion of 1 part to 15; and this is afterwards worked up into an almond emulsion. The minimum dose is one grain. *Gazette des Hop.*, 1848, No. 13.

British and Foreign Medico-Chirurgical Review, April 1848, *p.* 457.

157.—ON THE FORMATION OF FAT.—By Dr. G. E. DAY, M.A., Lecturer on Animal Chemistry at the Middlesex School.

To consider this question in its general bearings, we should turn our consideration to vegetable physiology, and endeavour to ascertain the nature of the process by which the fats are produced in plants. Although we are incapable of describing the exact nature of the changes which actually occur, we have strong evidence that starch is the substance from which the vegetable fats are produced. Thus all the seeds from which we are in the habit of expressing oil—the castor oil seed, linseed, &c.,—in their early stages contain starch, but this starch gradually decreases as the quantity of oil increases; and when the seed has attained its full development the whole of the starch is found to have disappeared. Hence it seems more than probable that either directly or indirectly the starch is converted into fatty matter.

If, then, starch can be converted into fat in the vegetable kingdom, is it not possible that a similar conversion may occur within the animal organism? This question has given rise to a long and somewhat intemperate controversy between the French and German chemists; Dumas maintaining that plants prepare fat for animals, and that animals cannot do this for themselves; in short, that all the fat which animals possess originates in plants: while Liebig, on the contrary, asserts that animals are able to produce fat in their own organisms. It would be impossible for me even to refer you to all memoirs published on the subject, and as I regard the fact that fat may be formed in the animal from starch and sugar as established beyond all doubt, I shall content myself with mentioning to you a few of the circumstances that have led physiologists and chemists to arrive at that conclusion.

a. The first and one of the most striking facts bearable upon this point, is one presented to our notice in a similar manner in both the vegetable and animal kingdoms. A French chemist, M. Avequin, has described and analysed the wax obtained from the sugar cane, and he mentions as a singular peculiarity of it, that such kinds of sugar-cane as contain much wax have but little sugar. This leads to the inference, that one of these substances is formed from, or at the expense of the other, and as sugar is usually found at an earlier stage than fat, it might be fairly concluded that the sugar (a substance produced from the starch of the plant) had been converted into the wax.

It has, however, been shown by some excellent experiments of Gundlach, that wax can be prepared by bees from sugar; he fed bees with a solution of sugar-candy in water, and saw them producing wax. Thus sugar may be converted into wax, that is to say, into a fatty substance, both by the sugar-cane and by bees.

b. It is stated on good authority, that the West Indian negroes are remarkably fat and sleek during and just after the period of cutting the sugar-cane, when they always consume a large quantity of the juice.

c. I mentioned to you, when speaking of the sugar, that butyric acid might be readily formed from it.

d. The fattening qualities of substances, which themselves contain little or no fat are well known. All farinaceous substances, such as rice, peas, beans, potatoes, and corn, are selected by preference for fattening animals, and Liebig has shown that the amount of fat which is found on the fatted animal is very much more than can be accounted for by the mere fatty matter in the food. The following illustration, taken from experiments actually performed, will show you this more forcibly.

In order to fatten three pigs in thirteen weeks, 1000 pounds of peas and 6825 pounds of boiled potatoes are requisite; the latter being equal to 1638 pounds of dry potatoes. Now the amount of fat in this food is twenty-six pounds; the peas contributing twenty-one, and the potatoes five pounds. One fatted pig gives on an average fifty-two pounds of fat, and the three pigs 156 pounds. Each pig before being fattened contained on an average eighteen pounds of fat, so that the three contained fifty-four pounds. If to these pre-existing fifty-four pounds of fat, we add the twenty-six pounds existing in the food, we get eighty pounds; but the pigs have 156 pounds between them. Hence it obviously follows, that the difference, which amounts to seventy-six pounds must have been produced from the starch, &c., of the food.

e. In the same way, the influence of ale in producing obesity is well known; yet ale contains only a very minute trace of fatty matter.

f. It is stated by Dr. Gregory, on the authority of Dr. Webster, of Harvard University, that maize, which is free from oil, is found quite as effectual in fattening animals as that in which oil occurs. With regard to the manner in which the conversion of starch or (since starch can only be assimilated in the form of sugar) of sugar into fat takes place in the animal body, "it is certain," says Liebig, "that it only takes place in consequence of the simultaneous occurrence of the two processes of fermentation and decay or eremacausis." In other words, the conversion of substance such as oxygen into another containing less oxygen, is determined by the splitting up, as it were, of the sugar into two compounds, one of which contains the oxygen which the other has lost, and consequently contains an excess of that element when compared with the sugar. The oxygen in the process of decay combines with the hydrogen of the substance, and the highly oxidised compounds given out during fermentation are carbonic acid and water. According to this view, the conversion of sugar into fat is effected by the oxidation of its hydrogen, and by the separation of a certain proportion of its oxygen in the forms of carbonic acid and water.

Although Liebig strongly maintains that fat is thus formed in the animal body, he also fully grants that the fat which animals take in their food contributes to increase the quantity of fat in their bodies. Of this (he observes) we have certain and decisive proof in the pathological effects produced in persons who daily take a considerable quantity of cod liver oil. There is yet another source of fat, to which no English writer, with the exception of Mr. Paget, seems to have alluded: I refer to the formation of fat from the protein-compounds. From certain experiments made by Persoz on the fattening of geese with maize, he was led to conclude that they not only assimilate all the oily matters of the maize, and transform some of its starch and saccharine matter, but also transform a certain portion of their own tissues into fat. During the fattening, the blood becomes highly charged with oily matter, and much of its albumen disappears or is transformed.

Medical Gazette, Dec. 3, 1847, *p.* 969.

158.—CASES TREATED BY ELECTRO-GALVANISM.—By J. C. CHRISTOPHERS, Esq.

[The first case related is one of chronic rheumatism of three years' duration, and of most intractable character, the patient having undergone long courses of medical treatment, besides sea-bathing and homœopathic treatment. Though Mr. Christophers thought the case very unpromising, he determined to try galvanism: and]

First, says he, I passed a current down the spine for half an hour or longer, then from the spine to the hand for an hour. At the end of a few weeks she began to experience a feeling of warmth in the hands, and their strength gradually returned, so that by degrees she resumed her labours in her laundry, continuing the galvanism daily, as before. Her hands have now almost, if not quite, acquired their former power, (the distortion of course remains,) though she is still under treatment for the feeble condition of her ankles and knees, and is galvanized three times a week, with increasing benefit to both. Last winter this patient was confined entirely to her bed, this winter she has not kept her bed a day; moreover, she has regularly followed her occupation through a very severe season, and surrounded by circumstances eminently tending to produce an accession of her disease.

CASE 2.—A fine well-made man, in the prime of life, was attacked, some years since, with severe pain about the hip-joint, extending to the knee, which was at first treated as rheumatic, by drugs, counter-irritants, &c., and by the introduction of needles, at short intervals, from the hip down to the knee. No benefit was thence derived, and he was obliged to throw up his employment. He consulted several practitioners without obtaining relief, and amongst others myself. He complained of great pain in the buttock and in the knee-joint. The affected limb was two inches shorter than the other, much less in circumference, flabby, and cold; the power of motion was perfect, though sensation was evidently impaired. Here was another intractable case, in which a host of remedies had been tried without success; still there were circumstances about it that induced me to add electro-galvanism to the number, and with these results—that the pain gradually decreased, and the limb regained its size, strength, firmness, and temperature, and that the patient is now able to earn his living by following his occupation. The shortening of the limb of course remains.

CASE 3.—Is an abstract of an account by the patient himself. In July, 1838, he was attacked with fever, from which he recovered in a week or two, but found his left foot numbed, and that he walked lame. This increased; then came a difficulty in retaining his urine. In this state he became a patient in St. Bartholomew's Hospital. Liniment was applied to the foot, and four moxas to the loins, followed by poultices, and warm baths three times a week. After three weeks, he left the hospital unrelieved; but the urinary symptoms remaining troublesome, and weakness increasing, he became an out-patient at St. George's Hospital, where he was several times cupped, often blistered, &c. The patient reports that he remained in the same state till 1839, when he was seized with pain in the back, which was relieved in a week or ten days. Severe pain then attacked the foot in which he first experienced the numbness, and two months later the other foot, with the leg and thigh, became painful, and he was for three weeks in continual agony, the urinary annoyance continuing very troublesome, and the pains occurring occasionally, sometimes in one leg, sometimes in the other, occasionally in both, but never extending beyond the middle of the thigh. He found great difficulty in walking, which appeared to have increased during the previous year.

Such was the state of this patient when I saw him, for the first time, last summer. There was little doubt he was suffering from organic disease in the spinal cord, and I had no difficulty in tracing its origin to a severe injury done to the back, by a fall from a horse, some years since. Then came the question—was this a case likely to be benefitted by galvanism? I thought not; but this patient was the friend of the subject of case 2, and was most anxious it should be tried. I consented, and the result was as follows:—The incontinence of the urine gradually subdued, though it never entirely ceased; the legs acquired strength; the gait became firmer, and less tottering; and the foot acquired warmth. Such was the state of matters after three months treatment by galvanism! What further improvement might have been attained, (cure of course was always out of the question,) had the means been pursued, must be conjectural; for at this period the patient became weary of the treatment, and ceased to attend. That any amelioration should be attainable in so bad a case, must speak well of the means that procured it; and though I do not venture to hold it up as one of success, I do hold it to be successful in some degree, inasmuch as galvanism doubtless did more to relieve than any of the other remedies employed. *Lancet, Feb. 5*, 1848, *p.* 152.

159.—THE ELECTRICAL CLOTH:—A MODE OF EMPLOYING ELECTRICITY BY SIMPLE FRICTION.

The following plan is recommended for the preparation of electrical cloth. Five parts (by measure) of monohydrated sulphuric acid are to be mixed with three parts of monohydrated nitric acid. The cloth, either cotton or linen, is well saturated in this liquid (one part of cloth requiring fifteen parts of liquid by weight), and allowed to digest for an hour. The loosely adhering acid is then squeezed out of it, and it is thoroughly washed in water. In order to deprive it of any sulphuric acid, it is soaked in weak ammonia, and again washed. It is afterwards plunged in water slightly acidulated with nitric acid. This neutralizes any ammonia which may be left, and at the same time increases the electrical and combustible properties of the cloth. It is with this species of *pyroxyline* that M. Meynier has produced by friction large quantities of electricity; and some practitioners have used it with great benefit, in the form of local application and frictions, in various disorders of the nervous system. *Med. Gaz., Feb.* 18, 1848, *p.* 301.

160.—CASE OF RECOVERY FROM A LARGE DOSE OF STRYCHNIA.—By DR. T. ANDERSON, Edinburgh.

[A gentleman who was subject to tic-douloureux and was accustomed to take large doses of muriate of morphia for its relief, took one day three and a half grains of a powder which he had lately bought for morphia, and went out upon his business. Shortly afterwards a sense of numbness in the legs came on, and gradually increased in severity until he had great difficulty in walking, and had to be supported on his way home. On reaching home, he felt better and sat for a while, and then went to bed, about five hours after the first appearance of the symptoms.]

Just previous to stepping into bed, in order to insure a good night's rest, of which the recent symptoms rendered him somewhat doubtful, he took a second dose of the powder equal in amount to the first. In less than ten minutes after, he was seized with a violent tetanic spasm, affecting the legs and muscles of respiration, and had only time to call out for assistance before the sensation amounted to that of absolute suffocation. Fortunately assistance was close at hand, and he was immediately raised up in bed, with the effect of entirely relieving the sense of suffocation, and a medical man sent for. Spasms now followed each other in rapid succession, the intervals being about a quarter of an hour or twenty minutes, and the affection was confined principally to the legs, back, and respiratory muscles, the arms being comparatively unaffected. The numbness and dragging of the muscles, which had been continuous during the first five hours, disappeared entirely during the intervals of the spasms, and the patient was left without any uneasy sensations, excepting the exhaustion of the previous fit and the apprehension of its successor. During the whole of this time he was not only perfectly conscious, but his senses were preternaturally exalted, and he distinctly heard a variety of whispered observations of the physicians and his friends, which, from their tenor, were obviously not intended to reach the ears of the patient.

The paroxysms, after continuing for some time, began gradually to diminish in violence, the intervals becoming longer, and the duration of each spasm shorter, and it was hoped that they were about to pass off, when all at once they returned in their original violence. This proved, however, to be the last expiring effort of the poison; for the symptoms now entirely ceased, about thirteen hours after the first dose was taken. At the conclusion of the spasms, the patient was left in an excessively exhausted state, and was unable to turn himself in bed: from this, however, he recruited with great rapidity, as he was able to get up on the evening of the next day, and on the second he walked out, and went about his usual business. The most remarkable fact connected with the case is, that from that time, the attacks of tic-douloureux entirely ceased, and he has not since had any return of it. The medical treatment employed in the case was unimportant, and had not any effect on the progress of the symptoms.

[Analysis of the remainder of the powder showed it to be tolerably pure medicinal strychnia; and the seven grains which he had swallowed would be equal to nearly three ounces of nux vomica. This is the largest dose from which recovery has been recorded—one or two grains of strychnia, or a quantity of nux vomica equal to one-third of a grain, having proved fatal. As to the mode of detecting the strychnia, Dr. Anderson observes:—]

I have found Marchand's test a very good one, and possessed of a considerable amount of delicacy; and, as I do not recollect to have seen it mentioned in any of our medical periodicals, although it has been known for some years, I may simply state, that it consists in pouring upon the strychnia a few drops of strong sulphuric acid, mixed with about one per cent. of nitric acid, and then adding a small quantity of peroxide of lead, when immediately a fine violet colour is produced. The experiment succeeds best when the mixture is made in a watch glass, care being taken that the quantity of peroxide be extremely small, and then, on mixing with a glass rod, the colour makes its appearance in streaks.

Monthly Journal, Feb., 1848, *p.* 566.

161.—RECOVERY FROM A LARGE DOSE OF ACONITINA.—By Dr. GOLDING BIRD.

[No case of poisoning by this deadly alkaloid has hitherto been published, and consequently the description given by Dr. Bird is highly important. The patient was a highly educated gentleman, and obtained the aconitina by means of a prescription of his own writing, from one of the most respectable druggists in London. It is supposed that almost immediately after taking the poison he fell, and struck his head a severe blow against a piece of furniture, and that the poison, or the blow, or both, produced immediate and violent vomiting; but how long it may have been before he was discovered, cannot be stated.]

An excellent and most intelligent surgeon, and shortly after, a physician, were called to him; and about two o'clock in the afternoon, which must at least have been eight hours after taking the poison, Dr. G. Bird met these gentlemen. The patient was then fearfully collapsed; the surface cold and sweating; quite pale; the heart's action scarcely perceptible; pupils acting to light; no paralysis whatever, either of sensation or motion. Notwithstanding the intense exhaustion, the intellect was unimpaired. The most prominent symptom was the repeated and terrific vomiting of a brownish fluid. This vomiting was, however, peculiar, and perhaps hardly deserved that title, the patient really being seized with a kind of general spasm, during which he convulsively turned on his abdomen, and with an intense contraction of the abdominal muscles, he jerked out as it were, the contents of his stomach, with a loud shout, depending, apparently, on the sudden contraction of the diaphragm. These exhausting and distressing symptoms had occurred every minute or two. On attempting to make him swallow any fluid, a fearful spasm of the throat took place, producing the distressing effects so well known in the hydrophobia from the bites of rabid animals: this was not produced by the sight of water, but the convulsive movements of the body, and the emptying of the stomach, were excited by abruptly touching him. He was placed in a hot bath, afterwards removed to bed, covered with blankets, a large mustard poultice applied to the scrobiculus cordis, and an enema of turpentine administered. He remained in much the same state, the sedative effects of the poison on the heart gradually lessening, so that at nine o'clock the pulse was easily perceptible, although weak; the hydrophobic spasms were, however, then produced by every attempt to swallow, so that none of the medicines suggested for him could be made use of. It was therefore determined merely to administer enemata of beef-tea, with the yolk of an egg, and ten grains of laudanum, chiefly with the intention of procuring rest and giving support. He had a fearful night of exhaustion and spasm; intellect perfect, and even vivid, so as to enable him, whenever he recovered a little from his exhaustion, to carry on a conversation in the French language with an excellent and distinguished clergyman, who shared the task of soothing and watching him with his zealous surgeon. After this hard struggle with death, this very remarkable man emerged from the effects of the poison; and at two o'clock on the following day, when another consultation was held, he was regarded as convalescent. Dr. Golding Bird drew attention to the fact, that although at least *two grains and a half* of aconitina had been swallowed, yet that the majority of the poison must have been got rid of during the vomiting which followed the injury to the head, resulting from the fall. He also pointed out the remarkable train of symptoms developed, especially the convulsive vomiting and imperfect hydrophobia, as possibly being characteristic of the effects of the poison. For although they differed importantly from the effects of aconite root, with the exception of the sedative influence on the heart, still such a difference becomes intelligible when it is recollected that a pure alkaloid often differs materially in its physiological action from that of the plant from which it is an extract, as shown remakably in the case of the alkaloid conia. *Med. Gazette, Jan.* 6, 1848, *p.* 30.

162.—MODE OF ARRESTING THE BLEEDING FROM LEECH-BITES.—By J. P. Vincent, Esq.

It is a frequent embarrassment to the practitioner to find that after he has applied leeches they will go on bleeding beyond all expectation, and soon place children in danger of life. I have often been called in upon such emergencies, and never found the following expedient fail, simple as it is. I wind a very small piece of lint into a hard knot, so as to be less than a pea, and, wiping the orifice quite clean of blood, and placing this little pad upon the bleeding point, then taking advantage of the elasticity of this enlargement, I draw a strap of adhesive plaster over it. This has been quite enough to stop it perfectly, and on the third day there is an end of the wound. The point to be observed particularly in this application is, that the plaster may be long enough to insure a steady pressure of the pad by drawing up the integuments from a distance, by which the elastic quality of this structure gives a permanent pressure; but even this pressure should be confined as much as possible to the bleeding orifice. An extension of this principle has enabled Mr. Vincent to carry out the plan so as to arrest the bleeding from arteries of tolerable size, such as the superficialis volæ and the superficial palmar arch.—*Mr. Vincent's Observations on Surgical Practice.*

Medical Gazette, Feb. 3, 1848, *p.* 339.

163.—ON SEA-SICKNESS.—*By* Dr. F. W. Fisher.

First, the sickness produced by the sea, by riding in carriages, by swinging, are all phenomena of the same nature, determined essentially by the influence exercised on the circulatory march of the blood in the movements that the body undergoes under these different circumstances. Second, this influence has its principle in diminishing the ascending force of the excitory liquid in the aorta and the arteries branching from it; from this results a hyposthenic state of the brain by anemia or hyphohemia. Third, the insufficient excitation of the cerebral organ determines, by sympathy, spasmodic contractions of the diaphragm, vomitings—which have a particular tendency to reconvey the blood which is wanting towards the nervous centre. These efforts are a crisis which takes place in a conservative end. They manifest themselves not only in sea-sickness, but in many other circumstances where the brain becomes suddenly deprived of its normal supply of blood; for example, in persons not affected by phlegmasia, who are bled.

Treatment.—There are two orders of means to be employed. The first consists in removing one's self as much as possible from the cause—*i.e.*, from the motions of the vessel, in remaining in a recumbent position, in a hammock suspended without sensible friction at its points of attachment. The second has for its end to combat the effects of the cause on the organism. It acts especially to this end in stimulating the circulatory function by all the agents susceptible of increasing its energy. Thus, a tonic regimen, and active corporeal exercise for some days preceding embarkation. At sea, if the weather permits, one ought to keep on deck, in the breeze, make large inspirations, walk quickly until he perspires or is fatigued; or, better still, to engage in some hard exercise, even with the sailors in working the vessel. Hard work, that which requires great muscular effort, is the surest prophylactic against sea sickness. The girdle has also its advantages in contributing to force the blood towards the head, and perhaps in seconding the contractile force of the heart. Before the manifestation of the nausea, warm and exciting drinks are favourable. Thus coffee, tea, with the addition of a little brandy, may give a greater disposition to resist it, in stimulating the circulation and maintaining a diaphoretic state of the skin. Among the medicines, those which have an analogous effect on the economy may be administered with advantage, such as opium, saffron, acetate of ammonia, &c. When the sickness is declared, recourse is only to be had to the palliatives; lemons, exciting aromatics, relieve some persons; also the horizontal position, especially with the head low, in a hammock or bed suspended like a compass. But if one wishes to shorten the duration of the nauseous influence of the sea and diminish the tribute he must pay for a nautical acclimation, he must struggle with all his energy against the tendency to inaction. *Dublin Medical Press, Dec.* 15, 1847, *p.* 376.

164.—ON THE USE OF INDIA-RUBBER AS ADHESIVE PLASTER.—*By* D. F. Eyre, Esq.

If liquid India-rubber, spread upon calico, or other material, by a stiff brush, or by a knife, be used as adhesive plaster, it will be found to answer far better, in almost every case, than any other adhesive material, as it sticks firmly, is pliant, produces no irritation of the skin, and will bear lotions, or washing over it. It is also most valuable in cases where the skin requires a soft plaster of an unirritating nature for its defence, as in old persons, or others long confined to bed. In such cases, it is better to use either soft leather or the vulcanized India-rubber, made in thin sheets; the latter, from its elasticity is often the best, as it stretches with the skin on every movement of the body. To many kinds of wounds, from operations or otherwise, strips of thin vulcanized India-rubber, spread with the liquid, will be found invaluable as elastic adhesive plasters, as they become firmly attached to the skin, and give way to all its movements. But should any wounded part require a portion of the plaster to be non-elastic, as in the case of operation for hare-lip, &c., then, in order to secure such part from being stretched, a short piece of calico, about an inch in length, should be stuck upon the middle of the elastic plaster, by which means that portion would become stationary.

If a circular piece of thin vulcanized India-rubber, about two inches in diameter, be spread with the liquid, and applied on the abdomen of an infant having umbilical hernia, and a common bandage, such as is generally used for infants, be passed lightly round the body, the protrusion would be instantly checked: and if the same plaster be again spread with the liquid and re-applied, when it comes off from time to time, no trouble will be experienced by the infant. It is not necessary to use any pad or compress. The liquid, which is like thick treacle, and the vulcanized India-rubber, may be procured in most large towns. (They are manufactured in Manchester by Charles Macintosh & Co.) In most cases the thin sheet of the vulcanized India-rubber, or that sold as No. 50, will be the most suitable; in other cases, the thicker, or the No. 36, will be advisable.

The most convenient method of carrying the liquid is in one of the small compressible bottles, used by painters, holding about an ounce, so that, on removing the screw-cap, any required quantity can be squeezed out. The above statement will give a general idea of the subject; the materials may of course be used in a vast variety of forms.

Lancet, Feb. 19, 1848, *p.* 210.

165.—ON THE TREATMENT OF MAMMARY ABSCESS.

The following is a case of no very unusual occurrence:—A mother loses her infant, and broken-hearted at the event, she neglects to pay that attention to herself which her case requires. No attempts being made to relieve the distended breast of its secretion, the gland becomes hard and painful, and at length abscesses form in different situations. If the treatment is confined to the evacuation of matter by puncture, and to the application of fomentations and poultices but little good is done. The former abscesses continue to discharge; fresh ones are constantly forming, and the woman at length sinks in a state of hectic. Means should be used to stop the secretion of milk, which has been going on all this time, and perpetuating the mischief. We have no better means of effecting this than by the administration of a hydragogue purgative. I am usually in the habit of prescribing the sulphate of magnesia in the compound infusion of roses, to which, when there is much hectic and debility, I add some quinine, and dilute sulphuric acid. The effect of this treatment is sometimes almost magical. I have known a woman, who for months had been suffering from a succession of mammary abscesses, begin to get well from the moment that the salts produced its liquid evacuations from the bowels; the secretion of milk ceased, and the purulent discharge diminished, a more adhesive inflammation being established in the place of these two actions.

Prov. Med. and Surg. Jour., March 22, 1848, *p.* 161.

166.—HOW TO PREVENT BEDSORES.—By Dr. Purefoy.

The following ingenious method of preventing those dreadful specimens of disease or neglect sometimes presented in even our best-regulated institutions is suggested by Dr. Purefoy, in a former number of the Dublin Medical Press. The doctor may be allowed to describe his practice in his own words:—

"Having lately to treat a case of compound fracture of the tibia in an old man, the leg was comfortably placed upon the double inclined plane, and the case went on very favourably for some days, when it was thought that the leg must be placed upon the side, in order to relieve intolerable pain of the heel, and to obviate sloughing of the integuments. In this dilemma, it occurred to me to try to support the heel upon a bladder partially inflated, since pads failed completely in affording the desired relief. An ox-bladder, previously moistened in tepid water, and afterwards oiled, was placed under the heel in a flaccid state, and subsequently filled gently with air, so as to give the heel the necessary elevation, and promote, as far as might be, the comfort of the patient. The experiment was successful beyond my most sanguine hope, as the air flowed underneath and upwards by the sides of the foot and ankle, thus affording an unusually agreeable and secure support to the foot and instep, at the same time relieving the heel from undue pressure: the old man exclaimed in a rapture, 'O, sir, I'm in heaven;' Suffice it to say, that by renewing the bladder once only, the cure was perfected so far at the end of a month that the patient could leave his bed, and during this time he was completely relieved from the intolerable pain which at first was so very troublesome. I have lately prevented the occurrence of bed-sores, by the aid of a bladder placed under the buttock, and rolled up in a soft napkin, having previously been partially filled with air, although the patient had been for nearly two months lying upon his back, suffering under extensive gangrene, as the result of extravasation or urine."

Lancet, April 15, 1848, *p.* 423.

167.—ANIMAL LIGATURES.

Mr. Wragg states that he has been in the habit of using these ligatures for upwards of ten years. In the course of this period he has tied the arteries of the hand, fore-arm, leg, and thigh, and believes that the knot has always been removed by absorption. The ligature used has been the fibres of the sinew of the deer, twisted to the requisite strength. The sinew is first dried and the fibres are then obtained by tearing them out from the middle towards the extremities. When used the ends are cut off close to the knot.—*Southern Journal of Medicine, Sept.* 1847.

Prov. Med. and Surg. Jour., Feb. 23, 1848, *p.* 110.

168.—ON HOSPITAL GANGRENE.—By Holmes Coote, Esq., Demonstrator of Anatomy, at St. Bartholomew's.

[After relating a series of very interesting cases of hospital gangrene, which occurred in St. Bartholomew's Hospital, in 1846–7, Mr. Coote remarks,]

Hospital gangrene had not been witnessed, as an epidemic disease, in St. Bartholomew's Hospital, within the memory of any of the present medical officers; and diffused inflammation of the cellular membrane, in so severe a form as here described, is of the very rarest occurrence. These two singular affections broke out simultaneously, and were confined, almost without exception, to a few of the men's wards in the range of buildings forming the north-eastern side of the hospital quadrangle, and to a newly-erected neighbouring edifice, of similar aspect, appropriated to the reception of patients who have either undergone severe operations, or sustained serious injuries from accident. The former disease attacked, in most instances, recently incised wounds, of inconsiderable extent. There was little or no preceding constitutional disturbance; some patients complained of occasional darting pains about the brow, and of inability to sleep, but the skin was cool: the tongue clean and moist; and the appetite remained unimpaired. The first symptoms were the suppression of the ordinary healthy puriform discharge, and the appearance of a dusky-red inflammatory blush in the neighbourhood of the wound. This was accompanied by immediate and rapid sinking of the pulse, which became accelerated, beating with regular strokes, between 90 and 100 in the minute. In some cases, a stinging, burning sensation was felt in the wound. Within four-and-twenty hours, the edges, which had become under-mined, everted, and eroded, separated, and there was exposed a glazed surface, covered by a tenacious grey or fawn-coloured secretion, which, in thirty-six hours, became a circular, buff-coloured slough. The sore, surrounded by a dusky red zone, extended both in breadth and depth, by a mixed process of sloughing and of phagedænic ulceration, and rapidly disorganized the soft parts, down to the subjacent bones. A thin and extremely offensive discharge was secreted; and in many instances the pain became so severe, that patients compared it to the 'burning of a hot coal.' The spontaneous subsidence of the disease was marked by the disappearance of the dusky-red discolouration of the skin, and by the rising of the pulse. The secretion lost its fœtid odour, and became more puriform: the slough, which, if large, was dry and black, separated, and left a granulating and extremely sensitive surface, which cicatrized very slowly.

The only local treatment of any avail in arresting the progress of the disease, was the free application of the undiluted nitric acid to the surface and to the edges of the sore. It sometimes happened, that the eschar, thus formed separated in a few days, and left a perfectly healthy surface, which healed without an unfavourable symptom; but, in other instances, the remedy failed; the sloughing process recommenced, and local applications became of secondary importance. The common bread-and-water poultice, or the charcoal poultice, (of which the latter is extremely useful in correcting the horrible fœtor proceeding from the sore,) were the most comfortable to the feelings of the patient. Opium was given in large doses, to relieve pain, and to procure rest. Quinine and ammonia were administered with advantage, as the stomach would bear them. The patients, who, almost without exception retained the appetite, were allowed meat, with a moderate quantity of beer, wine, or spirits; they were separated as much as possible one from another; and several shut up singly in smaller rooms, were isolated from all communication with the rest of the hospital.

In attempting to investigate the causes which gave rise to these maladies, care must be taken not to confound hospital gangrene with sloughing phagedæna, as witnessed in patients suffering from syphilis, or broken down by intemperance and irregular habits. In both classes of cases the sore is characterized by a foul surface, rapidly spreading by a mixed process of ulceration and of sloughing: but the latter disease occurs in isolated cases, and is confined almost exclusively to the lowest order of prostitutes. Hospital gangrene spares neither the young nor the old, the temperate nor the intemperate: attacking wounds of inconsiderable extent, it produces a frightful sore, which frequently spreads in spite of all efforts to restrain it.

[Mr. Coote makes some further observations upon the causes which produced this disease. The hospital stands on the highest site in the city of London, the wards are spacious and not over-crowded with beds, and the ventilation and drainage are perfect. These circumstances, he thinks, exclude the idea that *local* causes originated the disease, especially since it vanished as suddenly and as mysteriously as it appeared. Thermometrical variations, Mr. Coote believes to have had a good deal to do with the matter: the summer of 1846 having been intensely hot, and having been followed by an early and severe winter. The occurrence of hospital gangrene in St. George's hospital and other places, at the same time as at St. Bartholomew's, undoubtedly favours the idea that the causes of the disease are to be sought for in atmospheric conditions.] *Lancet, Nov.* 13, 1847, *p.* 515.

169.—ON GANGRENA SENILIS.—By Professor Syme.

"Although the local soothing plan advocated by Mr. Pott alleviates the patient's sufferings, and delays the progress of the disease, it never, in any instance that has fallen within my observation, proved sufficient to arrest completely the morbid action. In order to attain this more important object, it is necessary to lower the tendency to excitement throughout the system, by enforcing a strictly vegetable diet, abstinence from every kind of stimulant, and the maintenance of perfect quiet in the horizontal posture. I am aware that the proposal of this starving plan may appear rather startling, and unsuitable for the old and debilitated persons who are chiefly subject to the complaint; and it sometimes requires considerable firmness to get the requisite measures carried into effect, when opposed by professional as well as vulgar prejudices. But the admitted hopelessness of the case, under ordinary treatment, should encourage the trial of other means, especially such as have stood the test of experience. Hospital practice does not frequently afford examples of this disease, to the production of which redundant nourishment, though not essential, seems powerfully predisposing; whence it is met with more often in persons of easy circumstances than in poor people, who are able to obtain merely the necessaries of existence."

In superficial gangrene of the extremities occurring in persons of the former description, Mr. Syme has uniformly observed—"That whether the patient was stimulated by an additional allowance of food and wine, or was permitted merely to continue his ordinary diet, the sloughing action prevailed in opposition to every sort of soothing application that could be tried locally. But when the starving plan was adopted, and the patient restricted to vegetable articles of support, the redness has quickly disappeared, the pain has gradually decreased, and the sloughs, ceasing to extend, have been detached from a subjacent healing surface of granulation, which before long formed a sound cicatrix. The only means employed, on such occasions, in addition to the vegetable regimen, have been linseed poultices, and the muriate of morphia, given freely, either solid or in solution, so long as the nocturnal pains continued. It may added, that no inconvenience has ever been sustained, to my knowledge, either from adopting the spare system, or resuming the ordinary one, even if the age of the patient was beyond eighty years."

We have always regarded the ordinary form of senile gangrene, in its commencement at least, as a disease of active inflammation; still, it appears to us that the surgeon must be occasionally prepared to meet with cases of dry gangrene in aged persons depending solely upon deficiency of arterial supply: we are not disposed to say that, even in these, an actively stimulating plan is the most advisable, but we apprehend that, in such instances, the author's treatment would be in some degree modified by the cause and manifest characters of the disease. *Med. Gaz., Feb.* 25, 1848, *p.* 334.

170.—ON THE TREATMENT OF SNAKEBITE.—By W. Bland, Esq., Sydney.

[A gentleman was bitten in the leg by a copper-coloured snake, *Coluber fulvus Australicus*, common in the neighbourhood of Sydney. He immediately applied two tight ligatures upon the limb, and when he got home took a full dose of laudanum with brandy.] [Mr. Bland saw him about an hour and a half after the accident, when he was suffering from pain in the region of the heart, with a feeling of constriction about the chest; the local pain had entirely ceased. Mr. Bland says:]

The part bitten was now fairly included between the blades of a pair of tenaculum forceps, raised from the subjacent tissues, and completely cut out with a scalpel, a circular excavation in the skin and cellular membrane being left, of about the size of the nail of the ring finger. A cupping-glass fitted with an air pump was now applied; but being found inconvenient, from the smallness and rounded form of that part of the limb where the bite was situated, this was immediately dispensed with, and its use was replaced by the spontaneous services of some of the men on the establishment, who kindly offered to suck the wound, and continued to do so with the greatest readiness, and every desirable effect, so long as their assistance was thought requisite.

The immediate effect of the suction, as I have always found on these occasions, was to relieve the pain in the heart and the constriction of the chest, which had both left in about half an hour after the suction had been commenced. The pulse, also, which had ranged from 96 to 98, fell to 82.

[The pulse, however, shortly rose, and he had giddiness and dimness, but these symptoms were ameliorated by giving a teaspoonful of turpentine. In a few hours, the pain in the heart and the constriction of the chest having returned, he was bled to 16 oz. with relief; in the evening, these symptoms recurring, a further bleeding was practised, and the head, face, and hands, bathed in cold water. In the morning he was better, but during the next evening and night had slight attacks of constriction, which were relieved by the application of a stimulating liniment to the chest. After that time he had no further symptoms. Mr. Bland having seen many cases of snake-bite during the last thirty years, states that in their treatment the following means should be resorted to, whatever be the species of snake which has given the bite:]

1st. The immediate application of a ligature, whenever practicable, between the bite on the limb and the centre of the circulation. 2nd. The excision of the bitten part in the manner above described. 3rd. The suction of the wound, or the application of the cupping-glass. 4th. The exhibition of stimulants, as oil of turpentine, aromatic spirit of ammonia, brandy or other spirits, eau-de-luce, port, sherry, champagne, or other wines. 5th. Bleeding, more especially for the relief of the heart and chest, and perhaps of the head. 6th. The application of cold to the head, face, and hands, by the occasional washing of those parts with cold water, according to the patient's wishes and feelings, and due ventilation of the apartment. 7th. Sound sleep should also be prevented for some time; and should the weather be cold, or the patient appear chilled, which occasionally happens, due means should be resorted to in order to restore warmth.

Lancet, Jan. 15, 1848, *p.* 71.

171.—NEW INSTRUMENT FOR TARSAL TUMOURS.—By W. R. Wilde, Esq., Dublin.

In our Report for last year we mentioned that Dr. Desmarres had invented an ingenious description of forceps for the removal of tumours from the eye-lids, and we described the mode of using it. We stated, however our objection to its use,—that it was only applicable to the removal of those little bodies by an external incision, a plan few operators will, we think, now agree to. We have, however, taken the hint from our Parisian contemporary; and had an instrument constructed on precisely the same principle, but modified so as to answer the purpose to which we apply it.

When using it, the ring portion is slipped under the lid, upper or lower,

s to encircle the tumour: the blades are then screwed together with the
ssary degree of tightness, and the lid everted. By this means we have
lid fixed—a perfect tourniquet applied, by which all hemorrhage is pre-
ted, and, in all probability, pain is lessened, the globe defended, and a
nt of resistance obtained in the solid blade of the instrument, by which
o the tumour is pressed forward. Having opened the sac freely, we
rn out its contents into a fine silver spatula, or a Davielle's scoop: then
pply a fine probe, pointed with nitrate of silver, over the interior, smear
e surface with a little oil, restore the position of the lid, and loosen the
rceps. The instrument differs from Desmarres' in the position of the
crew, the size and curvature of the blades, and in the mode of its applica-
tion. *Dublin Quarterly Journal, May* 1848, *p.* 475.

172.—ON THE TREATMENT OF CARIES.—By E. W. Tuson, Esq., F.R.S., Surgeon to the Middlesex Hospital.

Many cases of caries have fallen under my notice, affecting in different cases almost the whole of the bones of the body. Caries of the spine, pelvis, bones of the inferior extremity, superior extremity, head, and face, have frequently been under my care. Various remedies and different applications have been employed: it is only within the last few years, however, that I have been able to find a medicinal agent to produce a permanent and beneficial effect upon caries of the bones: I am able now to state that I have been successful in this respect, owing to the researches of Liebig in the furtherance of organic chemistry, and the progress made in our knowledge of the formation of several parts of the human frame. The close identity and chemical composition of several parts of the animal body, according to the best authorities we are able to consult, clearly point out that dried blood, dried flesh, and other parts of the animal textures correspond very closely in their chemical composition with proteine, or that chemical basis which is essential to the formation of the various parts of the human frame, and which enters into the composition of the structure of every part combined with other elements. If we examine the chemical formulæ of some of the parts entering into the structure of the body, and we will take chondrine (the substance of the cartilages of the ribs), the composition shows that, when proteine passes into chondrine, the elements of water with oxygen have been added to it, while, in the formation of serous membranes, nitrogen also has entered into combination. Thus, then, proteine combined with water and oxygen form the cartilage of the ribs, and no doubt the cartilages in general, whilst a combination of proteine with nitrogen forms the serous membranes.

Some of the other structures are composed by other combinations of the elements of proteine combined with sulphur and phosphorus, whilst other parts of the human frame are combinations of proteine with certain salts or acids; but still in every structure proteine more or less abounds. The frame is formed from the blood, that is, the chemical compounds of proteine in the blood, during the different stages of our existence in infancy, youth, puberty, and old age; through these several periods of our life the circulation of the blood forms the various and minute structures which constitute our entire body. It is essential that the blood should be furnished with the elements so requisite for the formation of the several parts, and more particularly so when a disease exists, because it is requisite to establish a healthy action and restore parts that have become in a state of morbid activity.

The knowledge that proteine chemically formed various structures of the frame, and the supposition that the want of this chemical basis might encourage the development of diseased structure, and, in a measure, prevent the restoration of certain parts, led me to employ it as a medical agent, and carefully to watch its effect upon the system. I prescribed it in cases of cancer without any visible beneficial result. I next gave it in extensive ulcers with the utmost success—in cases of large sloughing ulcers of the legs. The ulcers soon became healthy and quickly healed, the patients speedily recovering health and strength. I then watched its effect in scrofula, and found a cure accomplished in many cases. A boy was admitted under my care at Middlesex Hospital with extensive caries of the metatarsal bones; it was considered necessary upon consultation to remove the bones by amputation; but, as the patient had enlarged glands of the throat, it was deemed advisable to improve his general health previously to the operation, and for this purpose I prescribed ten grains of proteine twice a day. In the course of two months the caries of the bones, for which amputation was considered necessary, was completely cured, and solely by the administration of proteine, as the disease had resisted the action of all other means which had been employed for a considerable time previously. A youth was admitted with caries of the tibia and bones of the foot; it was considered by the surgeon who sent him into the hospital that he must lose his leg; proteine was prescribed, and he was discharged cured. Thus, then, from carefully watching the effect of this remedy I was able to discover a very beneficial agent for the relief of one of those diseases of the bones which few remedies accomplish; and, from repeatedly observing the result of the exhibition of proteine in public as well as private practice, I entertain a very favorable opinion of it, as I have seen it successfully administered in very many cases that have fallen under my notice. Difficult cases of caries of the spine have been under my treatment, and have been cured by the exhibition of proteine.

Numerous other cases of caries have been successfully treated by the same remedy. Two cases of failure in the effect of this medicine have fallen under my notice. The one a man with caries of the bones of the knee-joint of long standing, with no constitutional derangement; all the means employed failed to produce anchylosis, and the administration of proteine produced no effect. The other case, a lady with extensive caries of the bones of the hip-joint of twenty-five years standing; this patient took proteine for some time with a beneficial effect, but it failed to produce a cure. I have prescribed it extensively with very beneficial results, and can recommend it as a medicinal agent and one calculated to produce a favorable termination in most cases of caries: also in some cases of scrofula, extensive ulcers, debility, diseases of the gums and teeth, rickets, undue lactation, and insufficient secretion of milk. In infancy, where debility exists, and where the functions are not duly carried on, and in some affections of the spine, five grains once or twice a day will be sufficient for a child, and ten or twelve grains for an adult; and I have ordered it to be taken as a powder, dry or upon bread and butter.*

In a case of disease of the hip-joint under my care, where the bones had become in a state of caries, and when the bowels were so torpid that they required the most active and brisk aperient medicine to produce any beneficial results, the exhibition of proteine was most successful, not only in relieving the hip, but also in restoring the natural action of the alimentary canal; for, after a few doses, a healthy and natural action of the intestines was the result, and this patient, up to the time of his quitting London, required no further aperient medicine. I could bring forward numerous cases of the efficacy of proteine, but I trust sufficient has been said upon this subject. In one or two instances I must mention that I have found its effect rather inflammatory, and, should this result, it ought to be discontinued, active aperients administered, and such other remedies as the case may require. I have tested its tonic qualities by administering it instead of quinine, wine, or beer, not in a solitary instance, but on several occassions; and where Nature has to restore the loss of any part, caused by extensive sloughing of the soft structure, I have found by its exhibition that the cases have rapidly improved and terminated favorably in a much shorter period than under the administration of other remedies. *Med. Times, April* 22, 1848, *p.* 491.

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* Prepared by Mr. Garden, operative chemist, Oxford-street.

173.—EXTRACTION OF A FISH-HOOK FROM THE ŒSOPHAGUS.

Two children amused themselves by playing at angling, the younger takin the part of the fish. After several endeavors to catch the hook in hi mouth, the poor child succeeded too well, and determining, it appeared, t play his part to perfection, swallowed the hook. The consequence was that his brother drew the line, and fixed it at once in the œsophagus. Al attempts to extract it proved futile, till the surgeon took a pistol bullet, an having pierced it, put it on the line, and allowed it to slip down to the im pacted hook. The weight removed the latter, the point of which stickin into the lead, it was safely returned.—*Revue Medico-Chirurgicale*, Janv 1848. *Prov. Med. and Sur. Jour., May 3, 1848, p. 248.*

174.—ON PARTIAL DISLOCATION OF THE FORE-ARM BACKWARDS.—By M. H. Stapleton, Surgeon to Jervis-street Hospital, Dublin.

[Dr. Stapleton observes that Sir A. Cooper does not mention partial location of both bones of the fore-arm backwards; and that Boyer denies the following words, the possibility of such an accident :]

"Dislocation of the fore-arm backwards can never be incomplete. If summit of the coronoid process of the ulna was not forced, by the e which causes the displacement, beyond the transverse diameter of the ticular pulley of the humerus, the latter, on account of the obliquity of surfaces, would fall back into the sigmoid cavity of the ulna, when the fort at displacement had ceased. The coronoid process is drawn by a si lar mechanism into the fossa of the humerus intended for the lodgment the olecranon process, if it shall have advanced beyond the aforesaid point.

J. L. Petit was not so dogmatic. He admits the possibility of a partia dislocation. "When," says he, "the dislocation backwards is incomplete and the anterior eminence of the ulna rests posteriorly upon the most prominent part of the pulley of the arm bone, then, under such circumstances, th flexors are less tense, the extensors are relaxed, and consequently the for arm is less flexed, than in complete luxation backwards." Certain cas that have fallen under my notice must plead my excuse for differing wi so high an authority as Boyer, and induce me to follow the opinions of Pe which are in accordance with those of Monteggia and Leveille, and wh are moreover confirmed by the observations of Malgaigne, who decla that the incomplete or partial dislocation is by far a more frequent oc rence than the complete. The description given by him is, "that the c noid process of the ulna lies upon the inferior part, and a little posteri to the pulley or trochlea of the humerus; the fore-arm is scarcely at a of its flexure; the olecranon process is an inch and a half behind the trochlea, but upon a horizontal plane perceptibly inferior to it: whilst i complete dislocation, the coronoid process of the ulna being lodged cavity usually occupied by the olecranon, the olecranon is found equally distant from the epitrochlea, and posterior to it, but upon a and evidently superior to it."

[Dr. Stapleton gives first a case of incomplete dislocation of th backwards, occurring in a boy six years old.]

The child supported his injured arm with his right hand: it was a third of its flexion; pronation and supination were perfect. Comp tension was impossible, nor could the limb be completely semifle when attempted, the boy screamed out that his little finger was h had no power over the elbow-joint. The only account we could e him was, that he slipped and fell, with his hand under him. Ther deformity on the external side of the joint; the head of the radius felt to rotate in its normal position. On the inner and posterior p joint there was considerable deformity; the olecranon was thr inner side, but on a plane inferior to the epitrochlea. On each triceps there was an elastic swelling, but that on the exterior side was much the larger; the prominence in front was below the fold of the arm. There was scarcely any ecchymosis. Extension being made in the opposite direction, I pushed the olecranon forward with my thumb, and in about two minutes I suddenly bent the child's arm round my own, which acted as a fulcrum. The reduction was easily accomplished. The fore-arm could now be flexed to the fullest degree, and the child had the full command of the joint.

It was evident to all present that the radius was in its normal position in this case, and that the external condyle preserved its proper position with regard to the shaft of the humerus. The great pain in the little finger was produced by the tension of the nerve. It was not fracture of the internal condyle, as the fore-arm could not be bent to a right angle, nor the ulna made to resume its natural position. That there was a displacement backwards of the ulna cannot be disputed. Was it a complete or incomplete dislocation? I should say that it was incomplete, as the coronoid process was not thrown into the posterior fossa of the humerus.

[Next he gives two cases in which there was a similar displacement of both bones. In one of these, he tells us,]

The reduction of the dislocation was effected by an assistant passing his arm round that of the patient; extension of the fore-arm was then made by grasping the hand, and rotating it outwards; in about a minute, the head of the radius was seen to assume its proper position, and the fore-arm being suddenly bent, the olecranon immediately resumed its natural position. The fore-arm could now be flexed and extended, and also supinated and pronated.

[In conclusion, Dr. Stapleton repeats the important advice of Boyer:]

"If dislocation of the elbow be not quickly reduced, time is given to the soft parts to inflame, and it becomes quickly irreducible. It is rarely after a month or six weeks that reduction can be accomplished, and this is about the time that the inflammation and swelling ordinarily takes to subside. To what consequences, then, are we exposed, if we wait for the swelling and effusion to entirely subside, when any inflammation that may have been present was not to be dreaded beyond six or seven days. Nature can do but little towards the restoration of the powers of the joint. The fore-arm remains partly flexed, and the power of supination and pronation almost entirely lost."

Dublin Quarterly Journal, May, 1848, *p.* 326.

175.—ON THE VENTILATION OF ROOMS.

We have received the subjoined from Mr. Small, surgeon, Boston:—The following is a useful and economical plan of ventilating the upper part of rooms, and one which I have adopted with complete success. A hole of about two or three inches diameter is made through the wall into the chimney, and the thing is done. No ventilator is required, no smoke issues from the hole, (that is, it has not in the many cases that I have had the plan tried;) on the contrary, it will cure a smoky chimney; it does not disfigure the wall; a picture hung diagonally will hide the orifice. Where there is a recess, the hole may be made laterally into the chimney. In case of a tendency to smoke, I would suggest that a piece of tin or sheet iron, of four inches square, with a hole of the required size in the centre, and a valve of cloth or leather tacked on at the back, be nailed or fastened on the wall with paper, seeing, of course, that the valve has free play. In the future building of houses, a round drain tile should be bricked into the chimney, at the top of the room. Unless the ventilating of rooms is easy of accomplishment, as well as economical, we can have no hope of its being generally adopted. The above-sized orifice I find to be quite sufficient in ordinary rooms. It answers equally well where there is or is not a fire.—*Jour. of Public Health.*

[Arnott simplified, and usefully, if correct and practicable.

Lancet, March 25, 1848, *p.* 343.

176.—RAPID MODE OF PROCURING VESICATION

Apply six drops of a mixture of one drachm of liq. ammoniæ fortissimus, and two drachms of olive oil, to the woollen side of Marwick's spongiopiline, and press this gently against the skin. In the course of ten minutes a perfect blister is formed.—*Pharm. Journ.*, Feb., 1847.

Prov. Med. and Surg. Jour., Jan. 12, 1848, *p.* 26.

177.—NEW CAUSTIC HOLDER.

[Mr. T. J. Pettigrew, F.R.S., describes a useful caustic holder with ball and socket joint, by which the caustic can be turned in any direction.]

Lancet, Jan. 8, 1848, *p.* 53.

178.—ON TINCTURE OF ACETATE OF IRON.—By M. Donovan, Esq., M.R.I.A.

An excellent tincture of acetate of iron may be produced in a few minutes and without risk of failure, by the following process. Mix two drachms of red oxide of iron, prepared according to the Dublin Pharmacopœia, with half an ounce weight of sulphuric acid; and expose the paste to the heat of a spirit lamp for a few minutes; when it will suddenly solidify. Instantly remove the lamp: triturate the solid mass with nine drachms of acetate of potash, and add eight ounces of rectified spirit. The tincture is now complete; and without any digestion, will, by filtering, at once afford a transparent, beautiful, deep-crimson liquor, which in one drachm measure generally contains one grain of peroxide of iron.

This process is, as far as I know, unexceptionable, provided that the tincture is not to be kept longer than a few months; but it at length begins to deposit, and the decomposition will slowly proceed, no doubt to the full extent, although I have never had it on hand long enough to prove the fact. If the above quantity only be prepared at a time, it will not be impaired until in the course of business, time enough will have elapsed for its consumption.

A much more permanent tincture, and which I have never known to change, may be produced in the following manner; but the method is a little more troublesome. Take two ounces of precipitated carbonate of iron; and sixteen ounces by measure of commercial acetic acid of such strength that one part of it to seven of water will be equal to distilled vinegar. Introduce them into a glass matrass, and when the slight effervescence is over, boil the mixture until the whole is reduced to twelve ounces; when cold, filter. Expose the blood-red-solution thus obtained in a broad, shallow dish for three days, then pour it into a glass vessel large enough to hold three or four times the volume of the liquid. To this add fifteen drachms of common carbonate of potash (sal tartari) by degrees; so that the effervescence may not be unmanageable. When the effervescence is over, add twenty-four ounces of rectified spirit, and filter. This tincture will measure about thirty-two ounces, and will be of a fine deep-red colour, and styptic agreable taste. The tincture thus produced will not deposit; at least I have had it on one occcasion for eighteen months without the slightest deposition beyond what is necessary for its perfect clearing; in most cases, the filter allows a minutely divided, and at first insensible oxide of iron, to pass through it.

The theory of the process is obvious. The preceipitated carbonate of iron, no matter how long exposed to the air in drying, always contains a quantity of protoxide of iron. The oxide will, therefore, when heated in acetic acid, afford protacetate and peracetate of iron. The former salt, although little soluble in rectified spirit, will dissolve, at least to a certain extent, in spirit so much diluted; but much of it would separate in some days, and form a coating on the sides and bottom of the containing vessel.

To prevent this change, the acetic solution of iron is to be exposed to the air; the protacetate is thus converted into peracetate.

But this peracetate if simply dissolved in rectified spirit would afford a tincture from which the acid would soon be abstracted and acetic ether formed. To prevent this, and give to the tincture permanence, we must convert the peracetate into a triple salt, by the addition of potash, and then we accomplish what the pharmacopœial process contemplated, but failed to effect. *Dublin Med. Press, Dec.* 1, 1847, p. 341.

179.—ON "MURIATE OF OPIUM."—By Dr. J. G. Nicol, Crook, Durham.

During the last ten or twelve years I have made and prescribed a solution of opium, which I think is not mentioned in any work on materia medica with which I am acquainted. I use powdered Turkey opium and water, pretty strongly acidulated with muriatic acid. I have found by experience, that this is the best anodyne I am acquainted with. I see by Dr. Pereira's Materia Medica, that mention is made of Dr. Porter's solution of opium in citric acid. I made and used the same sort of preparation ten years ago; but it did not answer. It caused a great deal of headache and other unpleasant symptoms; moreover it became muddy, and appeared to be decomposed: therefore, I gave up using it. I have called this preparation of mine "Muriate of Opium," but perhaps it is not a very correct name. I may mention that I prepared solutions of opium with acetic, nitric, sulphuric, citric, tartaric, and muriatic acids, and also prescribed them, but the muriatic solution was vastly superior to any one in every respect. All of them produced headache, with the exception of the muriatic. I prefer muriate of opium to the tincture, wine, or powder of opium, and also to the muriate and acetate of morphia; in fact, to any other prepartion of opium. It never makes my headache, but all other preparations do.

My preparation is made according to the following formula:—Take of the best powdered opium, ℥j.; muriatic acid, ℥j.; distilled water, ℥xx. Mix. Shake this mixture very frequently every day, during fourteen days, then strain and filter. The dose is from twenty to forty drops, according to circumstances. Many of my medical friends have tried this preparation, and they highly approve of it.—*Pharm. Journal.*

Dublin Medical Press, Feb. 16, 1848, *p.* 104.

180.—HOW TO MAKE DECOCTION OF ALOES.—By R. W. Westall, Esq.

Mr. Westall states that, by preparing the compound decoction of aloes according to the following formula, several advantages are obtained, viz., that the article is of one uniform appearance, the rich colour is retained to the last, and the preparation is as good at the end of the twelve months as when first prepared:—Take of extract of liquorice, 14 drs.; carbonate of potash, 2 drs.; myrrh and aloes, of each, 3 drs.; water, 20 oz. Boil these ingredients gently with the above quantity of water in a water bath down to thirteen ounces, pour this into a bottle, then add croci three drachms; tinct. cardamon. comp. fourteen ounces; macerate for ten days, then strain through linen. Mr. Westall keeps it in this state, and adds an equal quantity of distilled water when required for use.

Dublin Quarterly Journal, May, 1848, *p.* 543.

181.—THE COMPOSITION OF MILK.

Table shewing the composition of the milk in man, and in various animals.

	100 parts contain—		100 parts of the solid constituents contain,			
	Fluids.	Solids.	Casein.	Butter.	Sugar and Extractive Matters.	Salts.
In Man . . .	883.6	116.4	31.2	23.0	43 .8	2.0
" the Cow	842.0	158.0	42.1	28.1	23.9	5.7
" Ass	907.0	93.0	18.0	13.2	68.5	
" Goat	865.0	134.0	41.1	28.0	30.0	
" Ewe	856.2	143.8	31.2	29.2	34-7	4.7

Medical Gazette, May 5, 1748, p. 752.

182.—COFFEE AS A DISINFECTING AGENT.—By Weber.

Coffee is one of the most powerful means not only of rendering animal and vegetable effluvia innocuous, but of actually destroying them. A room in which meat, in an advanced degree of decomposition, had been kept for some time, was instantly deprived of all smell on an open coffee roaster being carried through it, containing a pound of coffee newly roasted. In another room, exposed to the effluvium occasioned by the clearing out of a dung pit, so that sulphuretted hydrogen and ammonia in great quantity could be chemically detected, the stench was completely removed within half a minute on the employment of three ounces of fresh-roasted coffee; whilst the other parts of the house were permanently cleared of the same smell by being traversed with the coffee roaster, although the cleansing of the dung-pit lasted for several hours longer. Even the smell of musk and castoreum, which cannot be overpowered by any other substance, is completely dispelled by the fumes of coffee; and the same applies to the odour of assafœtida. It was remarked, however, that in general animal effluvia are more readily affected by it than vegetable.

That here an actual neutralization, and not a mere envelopment of matter, takes place, is shown from this—that the first fumes of the coffee are imperceptible, and continue so until a point of saturation, so to speak, is reached, whereupon the obnoxious smell disappears, and that of coffee predominates. The reverse happens with other aromatic vapours, and even with acetic acid and chlorine. Here both coexist until the one completely preponderates. The simplest form in which to use it against contagious matter is in powder. The well-dried bean is to be pounded in a mortar, and to be strewed over a moderately-heated iron plate, until the powder assumes a dark-brown tint. Caffeic acid, and the empyreumatic coffee-oil, act more readily in very minute quantity. *Med. Gaz., Jan.* 21, 1848, *p.* 129.

183.—A NEW AND CHEAP DEODORISER.

This deodoriser, discovered by Mr. Young, of Manchester, who has not patented it, is a waste product from the manufacture of chlorine. It consists principally of a solution of chloride of manganese witha variable quantity of chloride of iron, and generally a little hydrochloric acid and free chlorine. It is produced in large quantities, one house throws away thirty-six tons of the solution daily, and the total quantity is believed to exceed

150 tons a day, not any of which is at present usefully employed. Experiments have been made, which have satisfied Mr. Young that this solution has in a high degree the property of preventing decomposition in organic matter; cesspools and other places giving out the most offensive odour, have been immediately sweetened by it. The immediate effect of adding this substance to offensive matter is the conversion of the hydrosulphuret of ammonia, which is the most offensive of the gases of decomposition, into the sulphuret of manganese and muriate of ammonia, or, as it is often called, chloride of ammonia. The latter is a valuable manure, and the former, though of less value, is not injurious to vegetation. Manganese, like iron, possesses no acid metallic qualities, and is, like it, used by nature as a food for plants.—*Health of Towns Magazine.* *Lancet, Jan.* 8, 1848, *p.* 47.

184.—APPARATUS FOR CHLORINE FUMIGATION.

Mr. SMITH describes in the Pharmaceutical Journal, an apparatus which he has invented for the above purpose. By the way, are there any facts to prove that chlorine is a really disinfecting agent?

"The evolution of chlorine, to be useful, must be *continuous* in its supply, and not in sufficient quantity to be injurious to health, or detrimental to the furniture of a house; to this end has been constructed the chlorine gas generator, an apparatus whereby chlorine gas is slowly and continuously evolved during a lengthened period. It consists of a jar divided into three parts: the lower portion to contain the salt and manganese; the centre part is made with an interior shallow ring, to hold the acid; and the top is merely a perforated lid, to allow the escape of the gas. The acid is slowly combined with the manganese by means of a few loose-spun cotton threads immersed in the acid, and hanging over the side of the interior ring or trough, the lower ends of the thread reaching beyond the bottom of the ring; by this arrangement they act as syphons by their capillary attraction. The charge requisite for an apparatus of this description, to act for twenty-four hours, and suitable for a ten-roomed house, would be three ounces of black oxide of manganese in powder, mixed with eight ounces of common salt dried, and five ounces, by weight, of sulphuric acid, mixed with four fluid ounces of water. *Lancet, Jan.* 29, 1848, *p.* 127.

185.—ON A NEW PRESERVATIVE FLUID.—By Dr. STAPLETON, Surgeon to Jervis St. Hospital.

Dr. Stapleton says he has used this fluid for six years, and that it preserves pathological specimens without hardening them or changing their colour. He says,—]

The process I adopt is simply as follows:—In a quart of saturated solution of alum in water I dissolve half a drachm of nitre; in this fluid I immerse the recent preparation, which soon becomes decolourized, but the colour gradually returns within a few days, the period, however, varying in different preparations. When the colour is thus completely restored, I put up the preparation in a filtered saturated solution of alum.

Dublin Quarterly Journal, Feb. 1848, *p.* 280.

186.—ON THE USE OF CHLOROFOROM AND ETHER.

[These agents continue to excite interest in the profession, and to be better understood. They are not used so indiscriminately as they were during the first few months of their introduction. We subjoin a few of the most important papers which have appeared since our last volume. Mr. SIBSON, of Nottingham, says:—]

The stages of the increasing influence of chloroform, ether, and alcohol, are:—Cerebral excitement. Cerebral derangement; staggering intoxication. Cerebral sleep (sopor); pupils contracted; dreams; reflex functions of brain and spinal marrow still active. Cerebral death (coma); reflex functions of medulla and spinal marrow still active. Death of spinal marrow; cessation of respiration (heart's action still generally present). Cessation of heart's action.

It is very important to be able to tell easily when the stage of safety, sopor, is about to merge into that of danger—coma. The action of the pupils is the key to this knowledge. Chloroformization ought not to be continued one instant after the pupils, previously contracted, have begun to dilate. If unconsciousness can be secured by sopor, the inhalation should not be carried on to produce coma. If complete muscular relaxation be sought for, as in hernia to facilitate taxis, in dislocation to make reduction easy, and in tetanus, then it will be needful in general to urge the patient from sopor into coma, but as soon as the muscular relaxation is secured the inhalation should cease. When chloroform or ether is employed in chorea, delirium tremens, or other affections, it should never be urged beyond sopor. In neuralgia it is not usually needful to produce unconsciousness. Whenever the pain disappears the inhalation ought to cease.

Dr. Snow has made this important observation, that the effects of chloroform and ether increase after the administration of it has ceased; this he calls the cumulative property of those vapours. This increase of effect he has observed to last for twenty seconds. Mr. Wakley, in his experiments, observed the same thing. I observed this effect the other day in a woman whose lip was extensively pared under the influence of chloroform I gave up the employment during sopor, the pupils being still contracted; and in a few seconds coma supervened, the pupils being permanently dilated.

On this ground, Dr. Snow objects to rapid chloroformization. He conceives that the complete effect ought not to be gained in less than two minutes. I own I cannot see how a slow, but effective administration of the vapour, can lessen the danger arising from the still increasing effect after the administration has ceased. The longer the inhalation is continued, the greater the total amount of chloroform received into the system: and this chloroform, already circulating in the blood, will still, I conceive, under either circumstance of quick or slow inhalation, continue to produce an increased effect. Indeed, in the case in which I observed this action, the inhalation had been carried on with intermission some minutes. In another case, in which unconsciousness was produced quickly, the pupil, which had been dilated during one or two seconds, contracted immediately after the cessation of the inhalation.

I think, with my friend, Mr. Fearn, that it is important to dilute the chloroform vapour largely with air during the first few inhalations, so as to avoid the sudden shock on the nerves of the lungs, and accustom them to its presence. After the death in Newcastle, and after the alarming case at Guy's Hospital, related by Dr. Gull, in which respiration appeared to be suspended for some time, we must feel alive to the proper means for restoring animation, should it be suspended. If natural respiration ceases, there is nothing for it but to establish immediately artificial respiration. Ammonia, cold water, bleeding, will be resorted to in vain.

We ought, then, whenever we administer chloroform, to be ready, in case of need to perform artificial respiration; I have constructed a chloroform inhaler, which can be immediately so applied on the face, that by breathing through the external opening, and pressing back the larynx, artificial respiration can be established. The basis of this inhaler is the mask that I invented for the inhalation of ether, which mask Dr. Snow employed in May last.

"This inhaler is made of copper, brass, or white metal. It has a border or face-piece of thin flexible lead lined with oil skin covering the nose and mouth, and from its ductility easily adapted to any face. The lower or inspiring valve, is constructed on the principles of Arnott's ventilators, having a counterpoise weight which keeps it shut, unless acted on by pressure from without. The upper, or expiring valve, is a plain metallic lid always closed unless acted on by pressure from within. The tube to which this valve is attached, may be drawn out so as to expose an aperture for the admission of air when desired. To perform artificial respiration with this inhaler, draw out the expiratory tube; imbed the mask firmly on the face—press back the larynx against the œsophagus and spine—inspire deeply, and distend the chest by blowing through the upper tube. Renew the artificial respirations in rythmical succession, about sixteen in each minute.

As the action of the heart usually continues after the respiration has ceased, artificial respiration will generally restore animation. It is possible that the cessation of the heart's action, and of respiration, may be simultaneous, owing to the distention of the right cavities of the heart. In such a case, in addition to artificial respiration, the abstraction of two or three ounces of blood from the jugular may relieve the distention of the heart, and permit the renewal of its action. *Med. Gaz., Feb.* 18, 1848, *p.* 267.

[Mr. Wakley, Surgeon to the Royal Free Hospital, has made an extensive series of experiments with ether and chloroform, aided by Mr. Erasmus Wilson, and Mr. Bullock, who supplied the drugs. The animals submitted to experiment were dogs, cats, rabbits, rats, mice, guinea-pigs, hedge-hogs, pigs, ruminant and solid-ungulate animals and birds. The reader must refer to these interesting experiments for minute information. There is one very important practical conclusion which Mr. Wakley draws from these cases, viz., "That when there exists any disease of the heart, any aneurism near the heart, any threatening dyspnœa, or any tendency to an engorgement of the lungs, it would be highly imprudent to recommend the inhalation of the vapour of chloroform, or of ether; but that in any of the abnormal conditions here described, should the practitioner determine upon employing one of the two agents in question, assuredly the more dangerous of the two would be found in the vapour of Chloroform."]

Lancet, Jan. 1, 1848

[Dr. Snow considers that the five stages into which he divided the process of etherization (Retrospect, Part XVI., p. 336), apply also to the effects of chloroform. As to the comparative merits of these two agents, he says:—]

Chloroform has certainly the advantage over ether of being less pungent, and of being, therefore, more readily inhaled. It has also one or two advantages not named by Dr. Simpson; it occupies less space, and therefore excludes less of the air that the patient breathes, as I stated in November. It has another advantage, in not exciting a profuse flow of saliva, as ether sometimes does, which is very troublesome; and when the patient is on his back, as is the case usually in important operations, the saliva, coming in contact with the glottis, causes coughing at a time when the patient would not cough from the pungency of the vapour. But some of the properties of chloroform which Dr. Simpson calls advantageous as compared to ether, I do not appreciate altogether as such.

One is its greater rapidity of action. Ether required four or five minutes on an average to produce the full chirurgical degree of its effects on the adult. Now it might be desirable to shorten this time to a certain extent, but not, in my opinion to less than two minutes, not only to give ample time to observe its effects, but also on account of a property in the action of this class of vapours, which has not, that I am aware, been alluded to; I mean, the cumulative property they have. They act, it is true, with great rapidity, yet, to become imbibed by the blood, to pass through the heart, and reach the nervous centres, must occupy a little time, and I have often observed the insensibility to increase for twenty seconds after the inhalation has been left off. I have experienced this cumulative property myself to extend to twenty seconds, by taking a few inspirations of vapour, leaving off, and looking at a watch: consequently, I like to have about six times this period, or two minutes, for producing complete insensibility; but when administered in the way Dr. Simpson recommends, chloroform often produces its full effects in much less time than this. He himself observes that he has seen a strong person rendered completely insensible by six or seven inspirations of thirty drops of it. Danger, it is true, may probably be avoided by putting a limited quantity on the sponge or handkerchief, but then the full effect might not be reached, especially as it cannot be determined how much the patient inhales of what is put on, and the dose would have to be repeated, so that this plan is not very applicable in surgery; and Dr. Simpson himself recommends that "one or two teaspoonfulls of the chloroform should be at once placed upon the hollow of a handkerchief, and immediately held to the face of the patient." He adds that "generally a snoring sleep speedily supervenes."

What he is pleased to call a snoring sleep, I should denominate the fourth degree of narcotism, which is separated only by one degree more from a total cessation of respiration. I do not consider that snoring, or even some degree of stertor, is alarming or injurious, but I think it advisable not to induce this state with such great rapidity, lest the narcotism should proceed a degree further on account of the cumulative property of the vapour after it is discontinued. Let us look at this matter in another point of view. 100 cubic inches of the vapour of chloroform contain 128 grains of the liquid. Half of this quantity is enough, if inhaled within a minute or two, to produce the most complete insensibility; the whole quantity, if inhaled rapidly, might undoubtedly cause death; for I have observed that animals may generally be killed by half as much more vapour than will produce narcotism to the fourth degree. If, for instance, an animal is rendered completely powerless in two minutes by vapour of a certain kind and strength, death takes place by continuing it for another minute; if rendered powerless in one minute, then it dies in about half a minute more. Now 100 cubic inches of vapour of chloroform may be contained in 800 or even in 500 cubic inches of air. When air is saturated with the vapour of chloroform at 60°, 800 cubic inches contain 100 of vapour; at 70°, 500 cubic inches contain the same quantity; so that the 128 grains of chloroform might all be inhaled in four or five deep inspirations, and, consequently, a person breathing deeply might inhale a fatal dose of chloroform in a quarter of a minute. This should be borne in mind, especially by those who recommend that patients should breathe deeply when inhaling. I always tell persons to breathe quietly, and when I find, during the inhalation of chloroform, that the inspirations are deep, I open the valve for admitting the external air to further dilute the vapour. I seldom induce total insensibility in less than two minutes, and occasionally take three minutes. The exhibition of the chloroform requires great care when it has to be repeated to keep up insensibility in a patient already under its influence, during an operation; and under all circumstances, it will require additional care in summer, except an apparatus with a cold water bath is used.

I consider that on the whole, chloroform is superior to ether for adults, and that we are greatly indebted to Dr. Simpson for the introduction of its use. For children I prefer ether to chloroform, when the choice is left to me, on account of the greater rapidity of action of these vapours on them, as I stated to the Society a month ago, although I have administered chloroform several times to young children—one of them aged only ten months—and with perfect ease, safety, and success. I consider the less powerful agent of the two, however, sufficiently strong for very young patients, and my chloroform inhaler serves very well with the small face-piece for exhibiting it to them.

Children are brought under the influence of ether, sufficiently for an operation, in two minutes, and I think it impossible for the imagination to conceive any anæsthetic agent more mild and efficient than ether is in its effects on children—a less degree of narcotism than in the adult producing an immunity from pain, and the liability to excitement being absent. The ether, however, requires to be given to them with an apparatus, by which the vapour can be introduced into the air they are breathing, in the most gradual way; otherwise the pungency of the vapour, when suddenly admitted, makes them hold their breath, which is the case with chloroform also when given to children on a sponge or handkerchief. If it is desirable, as I believe it to be, that we should have an agent which can be safely and generally administered in this way to children, to women in natural labour, and for tooth-drawing, and minor operations, by persons of no special experience in the matter, it should be something much less powerful than chloroform, and less pungent than either of these vapours.

[Dr. Snow thinks that the conclusions drawn by Mr. T. Wakley from his experiments are not correct. Because congestion of the heart and lungs is found after death, it by no means follows that the condition exists during inhalation. The congestion found after death, Dr. Snow says,]

Arises from the circumstance, that in many instances in which animals are destroyed by these vapours the respiration ceases whilst the circulation is still vigorous; they die, in fact, as if by asphyxia; and it is on this account that, to avoid danger, in exhibiting vapours, we should attend to the state of the respiration rather than the pulse.

[We cannot, however, see how this circumstance disproves the opinion of Mr. Wakley, that in all cases of aneurism near the heart, in threatened dyspnœa, and engorgement of the lungs, chloroform would be injurious; on the contrary, we think Mr. Wakley's opinion is strongly confirmed, even by Dr. Snow.] *Lancet*, *Feb.* 12, 1848. *p.* 177.

[Mr. Lansdown, Surgeon to the Bristol General Hospital, gives us his experience as follows:]

In the case of strangulated hernia, an old lady of seventy-two was completely insensible in half a minute, when the tumour which before had been exceedingly tense, became perfectly soft, and the slightest pressure returned it immediaely. Another patient in delirium had taken six grains of opium, divided into three doses, in the course of twelve hours. Two of these doses I had myself given, therefore I know they had been duly administered. Seven hours after the last dose had been taken, no sleep having been procured, I covered his nose and mouth with a cloth, upon which I had thrown forty-five drops: in half a minute he was asleep. Quiet having been once obtained the opium took effect, and he slept for four hours, awaking pefectly quiet and rational; and now, four days since he took it, he is quite well, and has required no medicine.

The use of ether having been superseded, it would appear now to be almost useless to mention those cases which have occurred in our practice; but as the chloroform is a very similar agent, it may not be amiss to mention some in which I have used it, and the extent to which I have at times carried it amongst my obstetric patients. My practice being of a mixed character, and not paying more attention to midwifery than to the surgical department, I cannot be expected to have used it so frequently in that kind of practice as others who have paid exclusive attention to that branch of the profession. Upon one occasion of a labour, I went on imperceptibly hour after hour, not thinking how time was passing, until my patient had been inhaling the ether for eleven hours and a half, at intervals of about five minutes apart, and had consumed about fourteen fluid ounces of ether. Not a bad symptom followed; there was neither headache nor anything else unpleasant; but she was the next day very well, having herself been spared the knowledge, and her system the shock, of what would otherwise have been a very painful and tedious labour of twenty-eight hours' duration. Having mentioned this one, the others in which I have given the ether three or four hours and upwards, which I have done in several instances must sink into the shade. I have never had occasion to regret using the ether in my midwifery practice, which I have done thirty times. The patients also are themselves much pleased with it, and they have much more rapid recoveries than is usual upon ordinary occasions. I find the uterus sending out the placenta immediately after the expulsion of the child, and there has scarcely been any hemorrhage following. Since I commenced practice in 1828, I have seldom gone to a labour without my tincture of ergot in my pocket: not with the intention of using it during the labour—a mode of practice, which when employed indiscriminately, by way of hurrying the labour, cannot, I think, be too much condemned—but for the purpose of suppressing hæmorrhage after the expulsion of the placenta, should such occur. I have now quite forsaken my little bottle for the ether, which in its turn must make way for the chloroform. But the state of the perinæum is a thing which has forcibly struck me while using the ether; that has invariably relaxed before the head has come to bear upon it, thereby not requiring the pressure of the head to force it open and to lacerate it, as was frequently the case when left to itself in the old mode of practice. This advantageous quality I have not observed, while using the chloroform, the parts under its use continuing unaffected by it; neither have I ever found the action of the uterus, when in a sluggish state, induced by the chloroform as it is by the ether.

In the case of strangulated hernia, in which I used the ether, the result was similar to that I have before mentioned while speaking of the chloroform. The ether was much longer in producing its effect, the man being unwilling to inhale; therefore in such cases the chloroform is to be preferred, for the reason, that should the inhalation be opposed, the effect is so much more readily produced, that the patient becomes narcotic before he is aware of it. I have also freely given the ether in a case of tetanus, accompanied by trismus, which has lasted three weeks: the only thing by which the mouth could be opened was the inhalation of ether. The poor fellow has struggled through it thus far, and the trismus has now nearly left him. I hope to report this case at length in the Lancet, when I shall have time to do so. Dr. Protheroe Smith, in the perusal of whose letters I have felt much interested, in his paper on chloroform, inserted in the Lancet of November 27th, has so worded his last paragraph but one, that it may by many be understood that he was the first who recorded in the pages of the Lancet his experience of the use of ether in obstetric cases in England. If I am so to read it, I must beg to correct him. I am quite aware that his was the first case in which it was used in England; but mine following immediately after, was recorded in the Lancet of April 24th, one week previous to Dr. P. Smith's announcement; and if there is any honor in being the first to have used it in natural labours in England, I may claim that and its publication also, as my first case of natural labour took place on April 7th —Dr. Smith's April 27th. *Lancet, Jan.* 1, 1848, *p.* 11.

[From the following case, we see the good effects of ether inhalation *even in a state of great collapse.* It is that of a man under the care of THOS. WAKLEY, Esq., with fungus hæmatodes of the arm, who was so exhausted by repeated hemorrhages, that he was considered moribund. (The brachial artery had previously been tied, on the supposition that the case was one of diffused aneurism.) The case is thus reported:—]

14th.—Has rallied to some extent. In the afternoon he confessed to his priest and took leave of his children, as though certain of death. But after "confession" he expressed a wish to have the operation performed. Although the case appeared to be utterly hopeless, Mr. Wakley immediately consented to operate, and stated that he should administer the ether, as, from what he had witnessed of its sustaining power in some instances of extreme debility, he expected benefit from it, in addition to protecting the patient from the shock of the operation. The ether having been inhaled fo about a minute, Mr. Wakley amputated the arm. He preferred the flap operation, as it enabled him to cut below the point where the brachial artery had been previously tied. By adopting this precaution, he hoped to limit the loss of blood to a very small quantity. Although there were several small arteries which required ligatures, not two ounces of blood were lost in the operation. The patient did not feel pain until after the operation and dressing had been quite completed. Having taken, at intervals, some brandy, ammonia, and opium, he passed the evening and night quietly, and obtained some sleep.

15th.—Very slight oozing of blood; quite relieved from all pain; pulse 96, rather hard and small, tongue dry and red; took an egg and some tea this morning. To have beef-tea and fish for dinner.

16th.—Slept well last night without an opiate; is cheerful and takes nourishment well; pulse is now soft, 96.

[He continued to improve, and was discharged quite well in a few weeks.]

Lancet, Dec. 18, 1847, *p.* 649.

[Mr. Curling, in his address delivered before the Hunterian Society, remarks:—]

There are certain cases in which I am disposed to think that a preference is to be given to ether. Chloroform has a greater tendency to produce involuntary muscular contraction, and exerts also a more direct and a more powerful influence on the heart than ether. In those cases, therefore, in which we desire chiefly to obtain muscular relaxation, and in persons whose powers are much depressed, it may be advisable to employ ether. Ether is, perhaps, better suited also for those cases in which we desire to prolong the insensibility to pain, as its influence is less transient than chloroform, and more readily rendered persistent. A mixture of the two has been employed in Vienna, and this plan has been tried with advantage by Mr. Curling.

Anæsthetic substances, besides being useful in diminishing the shock of operations and subsequent reaction, operate beneficially by rendering the after exhibition of opiates unnecessary; and, further, according to Mr. Curling's experience, "the constitutional symptoms have been milder, and the cases have proceeded more satisfactorily than after the operations in which no means have been taken to prevent pain." He deems a further advantage to accrue from the less need of rapidity in operating; from an opportunity being given of acting with greater deliberation and exposure; and from the composure of the patient. In children these several advantages of anæsthetic agents become still more prominent. There is a condition in which the surgeon would naturally be extremely cautious in giving anæsthetic remedies, until experience had fully proved that they might be safely employed. This condition is, shock from an injury.

Where this state is excessive, and sensibility is consequently annihilated, a prudent surgeon would not venture to give chloroform; nor would it be needed. But when patients "have recovered from the first effects of the shock, and though the heart acts feebly, there is sufficient power to admit, if necessary, of operative proceedings; in such cases anæsthetic remedies usually exert a beneficial effect;" acting as stimulants; saving the hurtful effects of a second shock; inducing a healthy reaction; and altogether placing the patient in a more favourable state for recovery than where such means have not been resorted to. Lastly, where operations are needed in persons reduced by previous illness or exhausting discharges, anæsthetic agents have helped to support the patient during the operation, and had an exhilarating effect upon the powers of life afterwards. But in such cases it must be borne in mind that their effects are readily and quickly developed; and caution must be observed, so as not to produce too powerful an effect.

Lancet, April 8, 1848, *p.* 391.

[Various forms of instruments for inhalation have been recommended by different practitioners. For example: Dr. Cornwall exhibited to the Edinburgh Obstetric Society, a chloroform inhaler of his invention.]

It is a tin box which contains a phial of chloroform marked in drachms. At the bottom of the box are three layers of flannel, over which is a piece of perforated zinc. In using it, a drachm of the chloroform is poured in, and it is then applied over the mouth and nose of the patient; the edge being of a shape to fit closely to the cheeks, the requisite supply of air comes through an opening at the upper part of the box. In obstetric cases, where it is wished to keep up the soporific effect for some hours, or during the surgical operations where there are few assistants, this inhaler can easily be retained in its place by means of a tape attached to the small rings at the end of it, and, when so appplied, any additional quantity of chloroform required can be put in by means of a filler. Dr. Cornwall stated that, in the hands of those expert in the use of this anæsthetic agent, a towel, or handkerchief, or sponge, could no doubt be made to do well; but it required both care and practice to arrive at proficiency in this, whereas, with his inhaler, he considered it almost impossible for any one to go wrong.

He viewed the vapor of chloroform as a fluid—it being, in fact, much heavier than atmospheric air—and his inhaler as a drinking cup, which supplied each inspiration not only of the mouth, but of the nostrils also. In this way, and from the extensive evaporating surface, the full narcotic effect is at once induced; and this is of very great importance, preventing the awkward and injurious tendency of its exciting and sickening action. Dr. Cornwall considered the snoring, so commonly induced, indicative of the state of insensibility to pain, and, therefore, of the proper time to commence operations. He advised, however, that, while deep snoring lasted, the supply of the vapor should be reduced by holding the inhaler at a little distance from the surface. He was of opinion, that more attention should be paid to the effect produced on the pulse and features than to the quantity of chloroform given. At the same time, with a narcotic so powerful, he thought it right always to measure the dose put into the inhaler.

The advantages of this inhaler are, efficiency and safety; it effects a very considerable saving of chloroform, and thoroughly prevents the contact of the fluid with the lips or face, and the dripping of it on the dress. Its portability also may be mentioned. It is carried conveniently in the pocket, and, as to its cost, it can be had for 3s. 6d. Dr. C. found that rest in the recumbent position, quietness, and an empty stomach, are circumstances favorable to the chloroform taking proper effect speedily.

[Dr. Simpson, though approving of Dr. Cornwall's inhaler, objected to the practice of *tying* it, or any other, upon the face of the patient, since too large a dose might thus be exhibited. He said that:]

In using the handkerchief even, he never applied it quite close to the face of the patient, but always allowed a sufficiently free access of air. As to the quantity of chloroform to be used, Dr. S. judged entirely by the effect on the patient. He believed that, in surgery, the symptom most to be relied upon as indicating a thoroughly anæsthetic state, was slowness of respiration, or a degree of snoring, or stertorous breathing. After the appearance of this symptom, it is only needful to continue the inhalation, from time to time, by intermissions; and, by repeated applications of the handkerchief, the patient ought to be kept in the same sopor during the whole of the operation. In midwifery, Dr. S. believed that this deep degree of anæsthesia was, in ordinary circumstances, not required. He had found that, when administered so as to cause stertorous breathing, the uterine contractions generally ceased, and did not return till the effect had, in some degree, passed off. He had found, therefore, that the chloroform given in a surgical dose was very useful whenever he wished to stop the uterine contractions, as in cases where turning was necessary, and many other obstetric operations. In cases of natural labor, he generally began with a large dose of chloroform, so as to bring the woman at once completely under its influence. This mode of proceeding prevents the chance of any excitement; and, although it occasionally may stop the pains for a few minutes, especially if the labor is still in an early stage, yet the contractions recur as soon as the deeper state wears off, which it usually does in two or three minutes. The depth of the sopor is allowed to diminish by merely withholding the handkerchief till a pain comes on; and then the anæsthetic state is kept up by its reapplication, for two or three inspirations every four or five minutes; or what is better, with each succeeding pain. The patient should be kept unconscious, but not deeply so, till the head was passing the vulva, when a deeper anæsthesia was required.

Monthly Journal, April, 1848, *p.* 762.

Mr. Robinson, the able dentist, of Gower-street, has invented a remarkably ingenious instrument for administering the vapor of chloroform. The mouth-piece is constructed of leather, lined with tinfoil and lead: thus it is easily fashioned into any form, so as to fit the peculiarities of structure to which it may be applied. Being inelastic, it retains the shape into which it is fashioned. The other portions of the instrument consist of a small piece of metal network, behind which a little piece of sponge is hooked; and in front of it there is an opening, with a valve, for the admission of atmospheric air, which must pass through the sponge containing the chloroform before it can be inhaled. Another opening, having a valve, so as to admit of the escape of the expired air, is placed at the top of the instrument. This excellent little apparatus, occupying only two or three square inches of space, acts most perfectly, and it has been repeatedly used, with complete success, at the Royal Free Hospital, King's College Hospital, and other public institutions in the metropolis. *Lancet, Dec.* 18, 1848, *p.* 655.

[Mr. Erasmus Wilson also has invented an instrument for the administration of either chloroform or ether. He says:]

The instrument consists of a dome-shaped mask, which encloses the nose and mouth, and of a cylinder, about two inches long, by one inch and a half in diameter, which projects from its front. The mask fits accurately to the surface of the face, accommodating itself to all irregularities of form, by means of a rim of flexible metal, nicely padded, and admitting of an adjustment that completely prevents the admission of air between the instrument and skin. During inspiration, therefore, the air passes through the cylinder, while in expiration it escapes through a circular opening in the upper part of the mask, this aperture being provided with a valve of the most simple but effectual kind, composed of vulcanised caoutchouc. The cylinder is furnished with three metal plates, pierced with small openings; one of these plates is placed at the mask end of the cylinder; another at the distance of three-quarters of an inch from the first and the third, which forms part of a moveable cap at its distal end.

The space or compartment between the first and second pierced plates is furnished with two check plates, which prevent the chloroform or ether from dropping on the face of the patient, in whatever position the instrument may be held, while the space between the two outer pierced plates is the chamber for the reception of the sponge saturated with its fluid. The cylinder is, moreover, furnished with a moveable cap, which admits of the addition of fresh chloroform or ether to the sponge whenever it may be required.

In the form above described, the instrument is only fitted for the exhibition of chloroform; but by means of a modification, added by Mr. Coxeter, at my suggestion, a more extensive application of the apparatus is obtained. This modification consists, first, in a greater depth of the sponge-chamber, so as to admit a larger charge of fluid, and a larger evaporating surface—the quantity of ether required to produce anæsthesia being so much greater than that of chloroform; secondly, in the contrivance of an aperture in this chamber for the addition of chloroform or ether, without the removal of the cap of the cylinder, and without withdrawing the apparatus from the face of the patient; and thirdly, the conversion of the cap of the cylinder into a chamber capable of containing hot water.

The importance of the latter addition will be immediately recognised by all those who have had much experience in the use of the anæsthetic agents. Heat gives the small instrument the advantages of the larger apparatus in the exhibition of either; and heat, while it economizes the quantity of chloroform, insures its more speedy operation. During the late cold weather, I had frequent occasion to observe that the inhalation of chloroform required to be maintained for an unusually long time, although the operator took care to evelope the instrument with the palm of his hand. Mr. Thomas Wakley lately made to me a similar remark; and Mr. Bullock informs me that several gentlemen had complained to him of the inefficiency of chloroform—such inefficiency being wholly referrible to the cold state of the atmosphere. *Lancet*, *Feb.* 5, 1848, *p.* 154.

M. Guersant, *fils*, in disarticulating the middle finger of a man suffering from caries of the digital bones, used the following method for the inhalation of the ether. A small dish containing about two ounces of ether was placed under the chin of the patient, and the head and face enveloped by a towel. Two minutes and a quarter of inhalation with this apparatus sufficed for the production of insensibility to pain, and the operation was then performed without the knowledge of the patient.—*Journal de Medicine et de Chirurgie*, *August*, 1847. *Monthly Journal*, *Nov.*, 1847, *p.* 365.

[Dr. Clay thinks that the chloroform made in Edinburgh is to be preferred to that manufactured in England. He says,]

The chloroform of Edinburgh most undoubtedly differs much from that generally employed in England; for which difference several weighty reasons can be assigned. First, the price of the spirit from which it is manufactured in England, will always oppose the production of a good preparation, except at an enormous price: and this has occasioned the application of inferior preparations, and accounts for the frequent failures. In many instances no effect has been produced; in others, a long and harassing exhibition has been required; and in others symptoms of an alarming character have ensued. We must confess our surprise at the difference of the preparation, which is immediately detected both by the taste and smell; and we state our firm conviction, that in all exhibitions of this agent, it is advisable to use an Edinburgh production in preference to the English, as in the former place, the original cost of the material, allows the manufacture of good chloroform at a reasonable price. *British Record*, *March* 15, 1848, *p.* 29.

[It is proposed to substitute for chloroform, *Aldehyde*, which, according to the Giessen nomenclature,]

Is the hydrate of oxide of acetyle, and its formula is $C_4\,H_4\,O_2$ or $C_4\,H_3\,O + aq$. It differs from alcohol in containing more carbon and less hydrogen. It derives its name from the last peculiarity (*Al*cohol *dehyd*rogenated.)

[The discoverer is M. Poggiale, Professor of Chemistry at the Val de Grace.]

At the meeting of the 13th March, he stated that the respiration of the vapour of aldehyde was speedily followed by the most complete insensibility. Its stupefying action he found to be more rapid and more powerful than that of ether and chloroform. So far as we can ascertain, however, his experiments have as yet been confined to dogs, and in these animals he found that the state of insensibility was perfectly induced in forty-five seconds. The eyes became fixed, the muscles completely relaxed, and the pupils dilated and motionless. This state lasted three minutes, at the end of which time the animal, though still insensible, rolled about, and experienced some involuntary movements. After eight minutes respiration was performed in the natural way, and the sensibility of the skin returned. No accident followed the inhalation. In two experiments the respiration of the vapour was continued for *ten* minutes: the animal remained insensible and motionless, the muscles of respiration alone continuing to act. When exposed to a free current of air, the head of the animal was drawn backwards: respiration became convulsive, but afterwards regular; finally, the dog raised itself upon his fore-legs, and drew after it its abdominal members, which were paralysed. It entirely recovered in about a quarter of an hour. It was observed that the arterial blood had the strong and peculiar odour of aldehyde.

M. Poggaile remarks, that, if the powerful odour of aldehyde is not found to be an obstacle to its employment in surgery, this liquid will be a very economical substitute for chloroform. Large quantities of it may be prepared at a very small cost, by the distillation of a mixture of alcohol and black oxide of manganese with diluted sulphuric acid, and subsequent rectification of the product by chloride of calcium.

On reference to Dr. Simpson's paper, we do not find that aldehyde is mentioned as having been employed by him. It is impossible to speculate on the probable effects of its vapour on man, from its composition. No one could have supposed *a priori* that a vapour like that of chloroform, containing 69 per cent. of chlorine, could have been breathed with the comparative impunity which has been witnessed. Aldehyde may turn out to be, as M. Poggiale asserts, not only a more powerful, but probably a more manageable, narcotic than ether or chloroform. It should, however, have something more in its favour than mere cheapness, or order to justify its substitution for either of these agents in surgical operations.

Med. Gaz., March 24, 1848, *p.* 509.

On Chloroform in Midwifery.—[The most numerous papers on the subject of chloroform have been those referring to its use in obstetric medicine. The following cases and remarks by Dr. SIMPSON are interesting.]

Case 1 was a second labour, occurring a fortnight before the full time. Three hours and a half after the pains began, and when the os uteri was becoming well expanded, the inhalation of chloroform was commenced, and she immediately fell under its influence. Its action was kept up till the child was born, twenty-five minutes afterwards. She did not awake till after the placenta was removed, and then spoke of having "enjoyed a very comfortable sleep." She was not in any degree aware that the child was born; and when, in a few minutes, it was brought in from an adjoining room by the nurse, it was a matter of no small difficulty to persuade the astonished and delighted mother that the child presented to her was really her own infant. In her first confinement she had been three days in labour, and the infant had at last been removed by craniotomy.

Case 2.—Seen with Mr. Carmichael; a second labour: she began the chloroform inhalation before the dilatation of the os uteri was entirely completed; the child was expelled in fifty minutes afterwards. I kept her under the chloroform for a quarter of an hour, till the placenta was removed, the binder applied, and the body and bed-clothes were arranged and adjusted. On awaking, she declared that she had been sleeping refreshingly; she was quite unaware that the child was born, till she suddenly heard it squalling at its first toilet in the next room. An hour afterwards, she declared she felt perfectly unfatigued, and not as if she had born a child at all. In her first or preceding confinement she had been in severe labour for twenty hours, followed by flooding. No hemorrhage on the present occasion.

Case 3.—Patient unmarried; a first labour; twins; the first child presented by the pelvis, the second with the hand and head. The chloroform was exhibited when the os uteri was nearly fully dilated; the passages speedily became greatly relaxed, (as has happened in other cases placed under its full influence,) and in a few pains the first child was born, assisted by traction. I broke the membranes of the second, pushed up the hand and secured the more complete presentation of the head; three pains expelled the child. The mother was then bound up, her clothes were changed, and she was lifted into another bed; during all this time she slept soundly on, and for a full hour afterwards, the chloroform acting in this as in other cases of its prolonged employment, as a soporific. The patient recollected nothing from the time of the first inhalations, and was greatly distressed when not one but two living children were brought in by the nurse to her. Dr. Christison, who was anxious to observe the effect of the chloroform upon the uterus, went along with me to this patient.

Case 4.—Primipara; of full habit; when the first examination was made, the passages were rigid, and the os uteri difficult to reach. Between six and seven hours after labour began, the patient, who was complaining much, was apathized with the chloroform. In about two hours afterwards the os uteri was fully dilated, and in four hours and a half after the inhalation was begun, a large child was expelled. The placenta was removed, and the patient bound up and dressed before she was allowed to awake. This patient required an unusual quantity of chloroform, and Dr. Williamson, who remained beside her, states to me, in his notes of the case, "the handkerchief was moistened often, in order to keep up the soporific effect. On one occasion, I allowed her to emerge from this state for a short time, but on the accession of the first pain, she called out so loudly for the chloroform that it was necessary to pacify her by giving her some immediately. In all, four ounces of chloroform were used." Like the others, she was quite unconscious of what had gone on during her soporized state, and awoke altogether unaware that her child was born.

Case 5.—Second labour. This patient, after being some hours in labour, was brought to the Maternity Hospital. I saw her some time afterwards, and found the first stage protracted by the right side of the cervix uteri being thick, œdematous, and undilatable. The inhalation of chloroform was begun, and the first stage was terminated in about a couple of hours. Two or three strong pains drove the child through the pelvic canal, and completed the second stage. Fifteen minutes in all elapsed from the termination of the first to the termination of the third stage, or the expulsion of the placenta. The patient was dressed, and moved into a dry bed, where she slept on for a short time without being conscious of her delivery.

Case 6.—Second labour. The patient—a person of small form and delicate constitution—bore her first child prematurely at the seventh month. After being six hours in labour, the os uteri was fully expanded, and the head well down in the pelvic cavity. For two hours subsequently it remained fixed in nearly the same position, and scarcely, if at all, advanced, although the pains were very distressing, and the patient becoming faint and exhausted. She entertained some mistaken religious feelings against ether or chloroform, which had made her object to the earlier use of the latter; but I now placed her under its influence. She lay, as usual, like a person soundly asleep under it, and I was now able, without any suffering on her part, to increase the intensity and force of each recurring pain, by exciting the uterus and abdominal muscles through pressure on the lower part of the vagina and perinæum. The child was expelled in about fifteen minutes after the inhalation was commenced. In a few minutes she awoke to ask if it was really possible that her child had been born, and was overjoyed to be told that it was so. I have the conviction, that in this case the forceps would in all probability have been ultimately required, provided I had not been able to have interfered in the way mentioned. I might, it is true, have followed the same proceeding, though the patient was not in an anæsthetic state; but I could not have done so without inflicting great agony upon her.

Case 7.—A third labour; the patient had been twice before confined of dead premature children; once of twins, under the care of Mr. Stone of London; the second time of a single child under my charge. The liquor amnii began to escape about one o'clock, A.M., but without pains for some time. I saw her between three and four o'clock, with the pains commencing and the os uteri beginning to dilate. In two hours afterwards, the third stage was well advanced, and the pains becoming very severe, she had the chloroform exhibited to her, and slept soundly under its influence. In twenty minutes the child was born and cried very loudly without rousing the mother. In about twelve or fifteen minutes more she awoke as the application of the binder was going on, and demanded if her child was really born and alive, as she thought she had some recollection of hearing the nurse say so. She was rejoiced beyond measure on her son being brought in and presented to her.

The cases which I have above detailed were all cases of natural labour, and required no special artificial assistance. In none of them did the inhalation of chloroform do harm of any kind to either mother or child—while it saved much maternal suffering and human pain. No woman could possibly make better recoveries than they have done and are doing—and no children could look healthier and more viable. I shall now state some operative and instrumental cases of labour in which I have used the inhalation of chloroform.

Case 8.—Fourth labour; the mother deformed, and the conjugate diameter of the brim of the pelvis contracted from the projection inwards and forwards of the promontory of the sacrum. Her first child was delivered by embryulcia; the second, by the long forceps; the third was small, and passed without artificial assistance. On the present occasion, after suffering slight pains during the whole night, labour set in with greater severity towards morning. After being in strong labour for some hours, she was seen first by Mr. Figg, and afterwards by Dr. Peddie, her ordinary medical attendant. I was called to see her about four o'clock, P.M. The pains were enormously powerful and straining, imparting to the mind the dread of the uterus rupturing under their influence: but the head of the child was still altogether above the brim, and only an œdematous ridge of the scalp passed through the superior and contracted pelvic opening. The passages had become heated, the mother's pulse raised, &c., and Dr. Peddie had tried two different pairs of long forceps. After I arrived, he applied, with great skill, another pair of long forceps which I had with me, but it was found impossible to move the head in the least degree forwards. The urgency and power of the uterine contractions, the immobility of the head upon the brim of a deformed pelvis, and the state of the patient and of the parts, all showed the necessity of relief being obtained by artificial delivery. In her first labour, I had assisted Dr. Peddie in delivering her, under similar circumstances, by perforation of the head. But here the child's heart was heard distinctly with the stethoscope; and he at once agreed that I should try to deliver her by turning the infant, thus compressing and indenting the flexible scull of the fœtus, instead of perforating it, and affording (as I have, for some time past, taught and believed) some chance of life to the child, and more chance of safety to the mother. The patient was placed under the influence of chloroform, still more deeply than when the forceps were used. I passed up my hand into the uterus, seized a knee, and easily turned the infant, but very great exertion and pulling was required to extract the child's head, through the distorted brim. At last it passed, compressed and elongated. The child was still-born, but by applying the usual restorative means, it speedily began to breathe and cry; and when I called two days afterwards, I found both it and the mother well. The mother was utterly unconscious of aught that had occurred or been done while she was breathing the chloroform, and lay most passively still and asleep during the whole of the operative proceedings. She did not awake till about a quarter of an hour after her infant was born.

Case 9.—In the Maternity Hospital; first child. Labour began at ten P.M., (Nov. 21st.) I was desired to see her at six A.M., (22nd.) The os uteri was well dilated, but it was evident that the pelvic canal was contracted throughout, and the head was passing with unusual difficulty through the brim. The patient was complaining much of her sufferings. It was evident that it would be a very tedious, and probably, at last, an instrumental case, and one therefore calculated to test the length of time during which chloroform might be used.

She began to inhale it at a quarter past six A. M., and was kept under its influence till a quarter past seven P. M.—the date of her delivery,—thirteen hours in all. From the time it was begun to the time delivery was completed, her cries and complaints ceased, and she slept on soundly throughout the day. The bladder required to be emptied several times with the catheter. The head passed the os uteri at ten A. M., and during she day, gradually descended through the pelvis. At seven P. M., I at last deemed it proper to deliver her by the forceps; the head, which was now elongated and œdematous, having by that time rested for some hours against the contracted pelvic outlet, with little or no evidene of advancement; the bones of the fœtal cranium overlapping each other, and the fœtal heart becoming less strong and distinct in its pulsations. A warm-bath, irritation of the chest, &c., were necessary to excite full and perfect respiration in the infant. Whilst we were all busied with the infant, the mother lost some blood, but the placenta was immediately removed, and the uterus contracted perfectly. On afterwards measuring the quantity of blood lost, it was calculated to amount to fifteen or eighteen ounces. The mother's clothes were changed, she was bound up, and removed to a dry bed before she awoke. She had at first no idea that the child was born, and was in no respect conscious of being delivered. In fact she had been "sleeping" according to her own account, from the time she begun the inhalation, and thought she remembered or dreamed that she heard Dr. Williamson, the house-surgeon, speak uear her once or twice. Dr. Beilby, Dr. Ziegler, &c., saw the case with me. Three days afterwards, I found the mother and child perfectly well. She continued to recover so rapidly, that she insisted on leaving the hospital on the tenth day after delivery. *Lancet, Dec.* 11. 1847, *p.* 623.

DR. MURPHY said, that he had only employed the inhalation of ether in extraordinary cases, because he found that it caused excitement both before and after insensibility, and he dreaded the occurrence of hemorrhage at such times. Did chloroform cause a similar excitement? Dr. Snow considered the excitement to arise from the slowness with which ether was administered, which might be necessary or not, as the patient could bear it; the chloroform by its more rapid action, would not cause this so much, but the return to consciousness, after taking it, presented the same symptoms as were exhibited after the use of ether. He considered that two practitioners should be present in a case of labour if inhalation were to be practised, as one person's attention should be devoted to the inhalation only. Patients would not die from convulsions while inhaling, but from contiuuing to inhale after collapse had appeared. Dr. Murphy had known ether to cause spasms resembling the access of puerperal convulsions.

Lancet, Nov. 27, 1847, *p.* 575.

[In a case attended by DR. RIGBY,]

As the head approached the os externum the pains became powerful, and the patient expressed much dread of their recurrence. The perineum was now considerably distended by the head during a pain, and the labia somewhat separated by it. A sponge with fifty or sixty drops of Hooper's chloroform, was applied to the nose with a pocket handkerchief, and she was almost immediately under its influence. Up to this moment the head, even during the most complete interval between the pains, had not receded to any considerable extent, but the moment she was insensible the head receded further than I have ever noticed before, all detruding pressure upon the child, whether from the uterus or abdominal muscles, having ceased. The pains up to this moment had recurred every two or three minutes, but now there was an entire cessation for nearly ten minutes; when, however, pain came on, it seemed as powerful as before, and I decidedly think that the parts did not present so much resistance; they seemed more soft and flaccid, almost as they are known to be in syncope from severe hemorrhage. Consciousness returned, as from a deep sleep, and she begged to have it repeated, which was done, and as she gradually lapsed again into deep sopor, she murmured faintly, "It is so delicious." The pains returned at the same long intervals, and in about an hour the child was born, the chloroform having been renewed occasionally. She was slightly sensible from time to time, but seemed to suffer little, and fancied she had been but a few minutes under the influence of chloroform. I am aware that an opinion given on a single trial of this remarkable agent must be taken with caution, but every person present with myself, felt convinced that but for it, the child would have been born late on the evening of the 2nd instead of a quarter past twelve, and therefore just into the morning of the third instant. There can be no doubt that, besides allaying pain in obstetric operations, the perfect flaccidity and relaxation which it produces in the soft parts will prove of considerable service.

Medical Times, Dec. 11, 1847, *p.* 151.

[The opinion here expressed by Dr. Rigby respecting the relaxation of the soft parts produced by this agent, is confirmed by others. The reader will find at page 341 of Retrospect, Part XVI, a hint on this subject. It appears that experience confirms the idea we entertained of the efficiency of these agents in such cases, for at the meeting of the Westminster Medical Society, January 8, 1848,]

Mr. I. Brown related a case of protracted labour, in which, the pains having ceased, and the os uteri being extremely rigid, he administered, at the request of the woman, a drachm of ergot of rye without any effect. Having waited an hour, he made her inhale chloroform; pains almost immediately came on, the os uteri relaxed, and the labour was quickly terminated. He had found the chloroform always produce expulsive efforts of the uterus.

Med. Gaz. Jan. 14, 1848, *p.* 75.

[Another case showing the value of this agent for the same purpose, is related by Joshua Parsons, Esq., of Beckington. The patient in her previous labour had suffered much from rigidity of the os uteri. On the present occasion, after the pains had continued all day, the membranes were unbroken, and the os firm and hard. Mr. Parsons says:]

The external passages were in the state so graphically described by Dr. Rigby as being dry, hot, tender, and feeling as if stretched tightly over the bones. After half an hour's continuation of the pains, finding no appreciable change in the state of the parts, and seeing no prospect but a repetition of her former wearisome labours, I proposed inhalation, at least as a means of obtaining a temporary rest. She immediately consented, and was soon enjoying a quiet sleep, during which the pains, however, continued. In half an hour I again examined, and was as much surprised as gratified to find the head of the child resting on the perinæum, and the external parts dilatable and plentifully lubricated with mucus. My stock of chloroform being now exhausted, the woman was conscious of the two succeeding pains which sufficed for the birth of the child.

[Dr. Arnott, of Gorleston, relates also a case of rigidity, in which he says:]

The passages were dry, rigid, and hot; the os uteri unyielding and undilatable, opened up to about the size of a half-crown, and just within it a constricted band of circular fibres, apparently of still more intractable texture, imparted to the touch the feeling even of carcinomatous degeneration, upon which a strongly ossified fœtal cranium rested as upon a shelf. To add further to this unpromising state of things, the membranes had some time previously ruptured, and the liquor amnii drained away guttatim—thus putting one of the most efficient preparatory agents of the parturient process completely in abeyance. The pulse was, however, little or not at all affected, either in its frequency or other characters.

I determined upon the administration of chloroform. A lawn handkerchief was moistened with half a drachm of the fluid, and held over the mouth and nose a short time antecedent to the accession of the uterine throes. The anæsthetic effect was promptly developed, and it seemed to me to be still more readily induced at each succeeding exhibition, suggesting the impression of its possessing a cumulative action. After the fourth parturient effort, under the influence of chloroform, the vagina was found pretty freely lubricated with mucus; the os uteri was much more widely opened, as well as more dilatable; and the previously existing circular band of unyielding fibres assumed a crescentic shape merely, the posterior segment of the circle being completely obliterated. The expulsive forces gradually succeeded and increased both in frequency and intensity; the fœtal head descended with its face anteriorly, and was at last thus expelled—the shoulders and body quickly following at about half-past eleven A.M., or one hour and a half from the first administration of chloroform. The placenta followed in about three minutes.

[The next, a first labour, is by J. B. HANCORN, Esq., Shoreditch, who says:] On my arrival at five o'clock, P.M., I found the os uteri dilated to about the size of a shilling, with a wiry edge, and muscular rigidity of the perinæum—in fact, such as would lead one to prophesy the termination of the labour at about five o'clock on the following morning. The patient immediately requested me to administer the chloroform, which I did, attentively watching its effect. In two minutes she became perfectly serene, and free from any expression of pain, the countenance calm and composed; no flush nor livid cheek, such as I have seen in other cases. The uterine action, which had been hitherto irregular, became steady in its interval as to time, thus leading one to suppose that the natural process goes on with more regularity when not under the influence of the will of the patient.

The uterus immediately began to yield, the muscular tenacity and resistance of the perinæum subsided, and, in fact, the muscular fibre became relaxed, and no longer offered resistance to the passage of the child. And here I may observe that the perinæum, by an action whether voluntary or otherwise, generally impedes the progress of the child, and in many cases presents a formidable obstacle: now this, at least, appears to be completely overruled by the action of chloroform, which, in itself, even without any other advantage, is of the utmost importance in relation to the sufferings of the patient and the time of the accoucheur. The expulsive power, in the present case, appeared to be greatly increased, as has been also observed by eminent practitioners. Now, I do not hesitate to state, that without the aid of chloroform, the probability is, the child would not have been born until nine or ten hours afterwards.

[There is a case of puerperal convulsions related by W. J. KITE, Esq., of Hatfield, in which the chloroform seemed to exert a most beneficial effect. The patient was thirty years of age, and in her second labour. After irregular pains had existed for about twenty-four hours she was seized with convulsions; bleeding was employed, but the convulsions continued. In about thirteen hours more, the membranes having been ruptured for some time, the os dilated to the size of a crown piece, and the convulsions still recurring at short intervals, Mr. Kite says:]

Mr. Thomas now suggested the inhalation of chloroform, as the most likely means of affording relief. A sponge, containing chloroform, was held to the nose, and its effects were soon visible. In less than five minutes she became perfectly quiet, and the convulsions ceased. In ten minutes, contractions of the uterus came on, and continued regularly; the head of the child gradually advanced, and as it descended into the vagina, the hæmorrhage ceased. In an hour and a quarter from the first inhalation, the influence being kept up the whole time, she was delivered of a male child, and without having any recurrence of the convulsions. The inhalation was now discontinued. The placenta followed in a few minutes; the uterus contracted and no hemorrhage followed. *Lancet, March* 4, 1848, *p.* 254.

[Mr. FEARN, of Derby, has also given the chloroform with excellent effect in a case of puerperal convulsion before delivery. The woman had been insensible during the whole day, with frequent convulsions, which ceased almost immediately after the chloroform took effect; and when completely under its influence, she was delivered with the crotchet.]

Medical Gazette, Feb. 11, 1848, *p.* 325.

[Mr. Clifton, of Welwyn, relates another case in which it was equally efficacious. Notwithstanding the most violent convulsions, the woman sank into a tranquil sleep in a minute or two after its use.]

Medical Times, Feb. 12, 1848, *p.* 335.

[Dr. Murphy, who is decidedly favourable to the use of chloroform, remarks, as one of its advantages, that its anodyne effect is produced without any previous or subsequent excitement. The following, he says, are the effects of chloroform on parturition:]

1st. It does not interfere with the action of the uterus, unless it be given in very large doses, which is never necessary. 2nd. It causes a greater relaxation in the passages and perineum; the mucous secretion from the vagina is also increased. 3rd. It subdues the nervous irritation caused by severe pain, and restores nervous energy. 4th. It secures the patient perfect repose for some hours after her delivery. These three last effects consequently render an operation much easier to perform, and the recovery of the patient afterwards much more favourable. 5th. The order of its effects on the vital functions seems to be—loss of sensation—partial loss of voluntary motion—loss of consciousness—complete loss of voluntary motion—stertorous respiration—loss of involuntary motion—cessation of the action of the uterus—of respiration—of the action of the heart. 6th. Its injurious effects when an ordinary dose is given seem to depend on constitutional peculiarities, or on improper management. Much excitement about the patient may render her violent. Catalepsy has occurred in some; clonic contractions in others. Some patients are slow in recovering from the effect of a large dose: they remain giddy during the day, and sometimes faint when they stand upright. Dr. Murphy does not find that chloroform hastens the dilatation of the os uteri.

Medical Gazette, March 31, 1848, *p.* 551.

[On the other hand, we find the eminent authority of Dr. Ashwell, of Guy's Hospital, is against the use of chloroform in natural labour. He states it as his conviction that *chloroform ought never to be used in natural labour;* he thinks that whatever may be the advisability of using it in surgical operations, these are not parallel cases, and cannot be put in the same category. He says:]

Of course much might be said as to the propriety or necessity of the innovation; but this I waive, and I ask at once—Why is this great risk to be run? It is not pretended that it shortens the duration of the process; nay, if anything be attributed to chloroform on this head, it is almost certain that delay must be the consequence of its exhibition. There is no evidence to show that any *favourable* effect, save the unconsciousness of pain, can be traced to its influence. I do not deny that physical pain is an evil; but before we attempt to abolish this hitherto invariable accompaniment of natural labour, it is incumbent on the advocates of the use of chloroform, to prove to demonstration that this interference is entirely safe. A careful perusal of one of the able and admirable lectures of Dr. Tyler Smith, (vide the Lancet, March 27, 1847,) will satisfy any impartial inquirer that obstetric etherization is, at least, of very doubtful benefit and of very complicated and uncertain operation.

Baron Dubois says: "My profound conviction is, that inhalation of ether in midwifery should be restrained to a very limited number of cases, the nature of which ulterior experience will better allow us to determine." Let it be remembered that this opinion was given of ether, undoubtedly (according to the recent and ably conducted experiments of Mr. Wakley, jun.) a safer agent than the chloroform. M. Dubois remarks, that in one of his patients, "the most intense premonitory signs of convulsion were induced; the congestion was so great that he almost expected the eyeballs to syringe forth blood." Dr. Tyler Smith further adds: "I know it is ungracious to take the part of an alarmist in such a question, but many fatal cases have now occurred after operations in which etherization has been practised. The patient who underwent the Cæsarian operation died; another patient on whom extirpation of the eyeball was performed, sank; a clergyman whose leg was amputated never rallied after the operation; two of the women delivered while under the influence of ether, by the Baron Dubois, subsequently died; and fatal collapse occurred in the case of a woman from whose thigh a tumour was removed.

The morbid phenomena fairly attributable to ether, (a safer agent, be it remembered, than chloroform,) in cases which have recovered, have been, nausea, sickness, stertorous breathing, pulmonary and cerebral congestion, convulsions, and protracted failure of the heart's action;"—a sad list truly. These facts, and three deaths at least from the new agent, chloroform, besides many other serious results, will probably satisfy most practitioners that "a meddlesome midwifery" is still a bad midwifery. In common with most teachers, I have long inculcated at Guy's Hospital, "that unnecessary interfence with the providentially arranged process of healthy labour is sure, sooner or later, to be followed by injurious and fatal consequences."

I think the chloroform will be no exception to these precepts; nay, so sure am I that it needs only to be extensively used to insure its entire abandonment, that I would willingly leave it to such a result, if it might be accomplished without further loss of life. But the instances in which it has already proved fatal, although they will alarm, may not so quickly as is to be desired lead to its final relinquishment. It is therefore a duty to urge every just plea against its further use.

Dr. Simpson has put forth a pamphlet to exonerate the new practice from any censure on religious grounds. In this I do not mean to follow him. But it does seem to me to involve a grave responsibility so far to interfere with a natural process as to impair its integrity and perfection. The chloroform, if used effectually, induces at the least cerebral unconsciousness—in other words, a temporary paralysis or suspension of the functions of the brain, thus depriving the woman, during the most momentous function of her life, of all moral control. What may not be said of the irreligion and criminality, supposing the case to be a fatal one, of destroying before the extinction of life the higher principle, from the proper exercise of which our existence derives its true worth and responsibility—of the criminality of permitting a human being to cease to live, when we ourselves had destroyed the possibility of giving her any idea that this solemn event was certainly impending? The practitioner who administers chloroform in labor cannot tell, "a priori," whether this may not be one of the few cases in which death is to happen; nor can he know, in many instances at least, whether there may not exist some unsuspected disease of the brain or heart, which this new gas may carry to a sudden and fatal termination. I do not envy the remorse which must follow the conviction, that by such practice the momentous arrangements of a dying hour have been entirely prevented.

I forbear to enter into the question—whether there be any form of labor in which chloroform should be used—further than to say, in instrumental and flooding cases, we rely as a considerable evidence of the safety of the patient, and of the uninjured state of the womb and adjacent parts, on that very pain which it is the purpose of the gas to destroy. Whether in the very difficult cases of turning, where the womb is most firmly and tonically contracted round the child, it might be of use, I am not prepared to say. I fear, however, it would produce but little benefit. Lately, at Enfield, I was consulted in a case of rigid perinæum, where the chloroform was fully exhibited, under the impression that it might induce relaxation. No such result followed. Dr. Millar, with great promptitude, applied twenty leeches to the part, and the child was eventually born dead. If there was any effect produced here, it was to weaken the uterine effort, but whether the chloroform produced the death of the child, I cannot say. In conclusion, I beg to assure Dr. Simpson that I entirely disclaim every feeling but a sense of duty. *Lancet, March* 11, 1848, *p.* 291.

[In some cases of dysmenorrhœa we shall also find it a valuable agent. Dr. Bennet relates the case of a young lady whom he was attending for an affection of the cervix uteri, in whom menstruation was always very painful, and accompanied by great mental and physical depression. The chloroform afforded great relief. It was beneficially used also at the next period; and in another lady in much the same condition as the first, the use of chloroform mitigated the pains to a very great extent. Dr. Bennet thinks that when chloroform is inhaled in any quantity, it is not so innocuous as is generally believed; its use being sometimes followed by extreme muscular debility and nervous irritation for several days.]

Lancet, Feb. 19, 1848, *p.* 204.

[Dr. Protheroe Smith thinks that in cases of extreme exhaustion from hæmorrhage, ether will be more applicable than chloroform, from acting as a decided and permanent stimulant.] *Med. Gaz. Jan.* 14. 1848, *p.* 80.

[This powerful agent, however, cannot always be administered with safety: and we suspect that many alarming cases have been witnessed which have never been publicly reported. The most decided case of fatality which has been published is perhaps the following by Dr. Meggison: and, in the opinions of different medical men which are subjoined, will be found embodied some of the most striking objections to the use of this agent, and to its incautious administration. The following is Dr. Meggison's account of the case of Hannah Greener, as communicated by him to the Medical Gazette. The patient was a well-developed girl of 15,—the operation, that for onychia: she had previously undergone a similar operation at the Newcastle Infirmary, under the influence of ether. Having experienced the advantages of this agent, she insisted upon having an anæsthetic again administered. Dr M. says,—]

She appeared to dread the operation, and fretted a good deal: in fact she commenced sobbing on our entering the house, and continued so until seated in the operating chair, and commencing the inhalation, which was done from a handkerchief on which a tea-spoonful of chloroform had been poured. I told her to put her hands on her knees, and breathe quietly, which she did. In about half a minute, seeing no change in breathing, or alteration of pulse, I lifted her arm, which I found rigid. I looked at the pupil and pinched her cheek, and, finding her insensible, requested Mr. Lloyd to begin the operation. At the termination of the semilunar incision she gave a kick or twitch, which caused me to think the chloroform had not sufficient effect.

I was proceeding to apply more to the handkerchief, when her lips, which had been previously of good colour, became suddenly blanched, and she spluttered at the mouth, as if in epilepsy. I threw down the handkerchief, dashed cold water in her face, and gave her some internally, followed by brandy, without, however, the least effect, not the slightest attempt at a rally being made. We laid her on the floor, opened a vein in the arm, and the jugular vein, but no blood flowed. The process of inhalation, operation, venesection, and death, could not, I should say, have occupied more than two minutes.

Since the occurrence of this case, I have heard of several where temporary inconvenience was produced by chloroform, but not of any decided character, nor of long duration. In one case, after a third administration, temporary but furious delirium was produced; several complained of headache and oppression of respiration; and I have no doubt, now that the ice is unfortunately broken, we shall find that chloroform is not the infallible

[The writer of the above thinks that Hannah Greener was poisoned by the narcotic vapour, and suggests two circumstances to which the occurrence might be due; idiosyncracy, and the administration of the vapour too rapidly, and in a form too highly concentrated. It is, therefore, he thinks advisable to make trial of small quantities, that we may ascertain the existence of any peculiarity of constitution, before giving a patient a full dose. The rapidity of action of chloroform, he thinks to be a disadvantage; and urges that we should not allow the full effect to take place in less than two minutes. Upon this point, he says:]

The vapour acts much more rapidly than ether; but, as Dr. Snow observes, this is not an unalloyed advantage. In his opinion, it is desirable not to produce a full degree of chirurgical insensibility in a shorter period than two minutes. This precaution is necessary, not only to afford an opportunity for watching its effects, but also on account of the accumulative properties, which chloroform, like other narcotic vapours, possesses—a fact which has hitherto received but little attention. He has observed that the effect of the vapour sometimes increases for twenty seconds after the inhalation is discontinued; and he thinks it desirable to take six times this period, or two minutes, for producing complete insensibility, in order to avoid danger. When the patient breathed deeply, he diluted the vapour still further with external air. Now the question is, whether in this case, the deceased did not receive the vapour in too concentrated a form, and too rapidly; for she was, it appears, dead at the time at which, according to Dr. Snow, the degree of insensibility proper for a surgical operation should be produced. There is another circumstance pointed out by Dr. Snow, which deserves attention—the quantity of vapour breathed when the liquid is placed on a warm handkerchief is liable to great uncertainty. The degree to which it is diluted with air, can never be known. Operators, it is true, contrive to avoid any ill effects from this mode of administration, by not applying the handkerchief too soon to the nostrils and mouth, and occasionally withdrawing it. A man experienced in its use may thus avoid any risk of danger; still, considering the serious effects which have been observed to follow this mode of administering the vapour, it appears on the whole advisable to employ an apparatus as suggested by Dr. Snow, and, if possible, to regulate the temperature for its evolution.

Med. Gazette, Feb. 11, 1848, *p.* 236.

[Dr. Glover, it will be remembered, stated his approval of the means adopted by Dr. Meggison for the recovery of the deceased, especially the attempt at bleeding; but as blood *did not flow*, the patient being dead before a vein was opened, the case before us does not prove anything at all as to the utility of bloodletting. Dr. Simpson thinks that the woman was suffocated by the attempts made to revive her. With this view the editor of the Gazette disagrees. He says,—]

To believe that the deceased was asphyxiated, it is necessary to suppose that a mouthful of cold water, followed by brandy, "a little of which was swallowed," found its way into the air passages, and prevented her from respiring. This view appears to us to be quite inconsistent with the facts. A mouthful of cold water and brandy thus administered, would not we believe cause asphyxia; and had it so operated in this case, brandy and water would have been discovered in the air tubes on inspection. The plain and undeniable inference appears to us to be, *that the deceased was poisoned by chloroform vapour.* It is of no use attempting to place the facts before the public in any other shape. The post-mortem appearances coincide with what might have been expected from those met with by Dr. Glover, in 1842, in his experiments on animals poisoned by chloroform. We have already assigned reasons why we do not think that idiosyncrasy had any necessary connexion with the fatal result. It bears out the view expressed by Dr. Simpson, in a paper lately published, to the effect that if chloroform be exhibited in too strong a dose, and given uninterruptedly for too great a length of time, it will produce serious consequences, and even death. We agree with Dr. Snow, in thinking that the vapour was probably here given in too concentrated a form, and too rapidly; and that it thus destroyed life. This appears to us to be the only reasonable explanation of the facts. *Medical Gazette, Feb.* 18, 1848, *p.* 283.

[Dr. Snow has all along cautioned the profession against giving chloroform on a sponge or handkerchief, believing that its too rapid action on the system is highly dangerous. He says,—]

Although many of the inhalers in use are very faulty, I consider that they are safer than the handkerchief. They are liable to the objection that they obstruct the respiration, by causing the air to pass through sponges; but with a limited supply of air the chloroform is necessarily limited also, as its vapour, having no existence in a separate state at common temperatures, can only be inhaled with the air. To give chloroform in surgical operations, an instrument should be used which offers no obstruction to respiration, and by which the proportion of vapour in the air can be regulated; and those who have but a handkerchief or sponge had better use ether, which I consider has not yet been known to cause death, until other narcotic vapours may be introduced.

In the case under consideration, the fatal result should be attributed to the action of the chloroform on the nervous centres having extended so far as to put a stop to respiration; and I cannot agree in the opinion of Sir John Fife, that the immediate cause of death was congestion of the lungs, an affection which could only have caused death in a somewhat tedious and not in a sudden manner, and which undoubtedly ought to be looked on merely as a consequence of the mode of dying, and as an indication that the heart continued to inject blood into the lungs after oxygen was no longer admitted to facilitate its passage through the capillaries. In certain instances this is the case in animals killed by chloroform, whilst in other instances the respiration and circulation seem to cease together.

Medical Gazette, Feb. 18, 1848, *p.* 278.

On the Treatment of Poisoning by Chloroform Inhalation.—The patient should be laid on the floor, with his head, if possble, near a current of fresh air. The breathing may be assisted by compressing the chest, and a little cold water ought to be thrown on the face and chest. If the symptoms continue notwithstanding these means, artificial respiration should be diligently practised, and the extremities briskly rubbed with hot cloths. The friction promotes the capillary circulation, and in this manner, undoubtedly contributes powerfully to restore the action of the heart and lungs. In extreme cases electro-galvanism should not be neglected: shocks may be transmitted through the chest, so as to assist the efforts at artificial respiration, and, in the case of syncope, a powerful galvanic current should be transmitted through the heart. A very powerful and rapid means of rousing the sinking powers of life, and one readily obtained, is found in the application of boiling water to the chest. This is effected by filling a glass or cup with boiling water, over the top of which a towel is placed, and then inverting the vessel on the breast of the patient. The efficacy of this application has been repeatedly displayed in the practice of M. Rayer, of Paris. Individuals who, from disease, were so near death as to be completely insensible and speechless, have thus had intelligence and speech restored, while life was prolonged for a considerable time. Of course, it is understood that we only suggest its use in extreme cases. Dr. Simpson directs attention to the impropriety of administering stimulant liquids by the mouth, when, from the state of insensibility, the power of swallowing is lost. The danger of their covering the aperture of the glottis, or entering the larynx, and so hastening death by suffocation, is indeed imminent. When the saliva is secrteed in large quantity, it will be advisable to place the patient on his side, to prevent it acting injuriously in the same way. The loss of the stimulants is scarcely to be regretted, as the other means above proposed are infinitely more efficacious. *Monthly R'spect, M'rch,* 1848, *p.* 50.

In concluding our remarks on the use of anæsthetic agents in medicine, we cannot help adverting to some very important and novel views on this subject, brought before the branch meeting of the Provincial Association at Leeds, on June 7th, 1848, by Mr. Nunneley of that town. This gentleman stated that for many months he had been engaged in making experimental researches on those agents, with a view to ascertain, as far as possible, the modus operandi, the doses which may be borne with impunity, and the different modes of application: as well as, in case of an overdose, the best means to be adopted to counteract it.

His experiments have not merely extended to the common anæsthetic agents employed, such as ether and chloroform, but he has been endeavouring to ascertain whether or not there may be some others, which may either be more safely administered, or may possess still greater advantages than the usual agents employed. He stated that he believed it not improbable that it would ultimately be found that all those preparations, which have a *radical basis*, (in the language of modern chemistry,) such as acetic ether, bisulphuret of carbon, aldehyde, and many others of an analogous character, upon some of which he had made extensive experiments, would be found to possess similar properties on the animal economy. He did not intend to enter on this important question generally, which he reserved for another occasion.

This much Mr. Nunneley was prepared to state, *that chloroform appeared to be the most deleterious to life*, to require the greatest care in its administration, and that the boundary up to a fatal dose is by no means well-marked —that of two animals, in apparently the same condition, the same dose being given in precisely the same way to both, the one will speedily die, while the other will bear it with impunity,—that from the effects observed, he has reason to think the ultimate effects are in some respects not dissimilar to those produced by prussic acid,—that to some animals, as for instance the newt, the frog, the toad, some fish, slugs, snails, and some insects, the effects are *more* rapidly fatal than prussic acid of Scheele's strength; and that even in higher animals, when under the influence of an incomplete dose, or recovering from the effects of a large dose of either chloroform or prussic acid, the phenomena are in many respects very similar; and further, that the numerous post mortem examinations which he has made, fully corroborated this opinion. He stated that acetic ether, with which he had made numerous experiments, possessed very considerable anæsthetic powers,—that bisulphuret of carbon also possesses to some extent similar power, and so far as his experiments go, it is very important to add, that this power is of a safe character, the animal speedily recovering.

But of all these remedies he believes that sulphuric ether will be the safest and least noxious to life. On these points Mr. Nunneley intends hereafter to lay his experiments, already very numerous and varied, before the profession. His chief object on the present occasion was to call the attention of the profession to experiments proving, as he thinks, the value and safety of a *new mode* of administering these agents.

His object on the present occasion was to show that the action of all, or most of these agents, might be produced *locally by local application*, the sensorium being unaffected, consciousness being retained, and the limbs not subjected to their influence, being unaffected. He stated that either by *immersion* in a small quantity, or by the *vapour applied* merely for a limited period, a limb may be rendered *perfectly motionless and senseless*, and what may be an additional advantage, *fixed in any desired position*. He stated that he had immersed his finger in these fluids for about half an hour and an hour, and at the end of this period the finger was nearly powerless and insensible, and that it was forty-eight hours before the effects entirely disappeared, a sensation of heat and discomfort extending along the tract of the nerves to the axilla—that before operating on a difficult case for artificial pupil, he had applied for twenty minutes a small portion of the vapour of chloroform to the eye, by means of a small jar which accurately fitted the orbit, with the effect of rendering the parts nearly insensible. The first effect of these agents when locally applied is to produce redness, heat, and smarting, which subside, followed by swelling and redness of the integuments, which remain for some time. Mr. N. stated that he could completely paralyse any limb of frogs or toads by immersion or exposure to the vapour in about five minutes or less; and he mentioned, as a curious fact, that if the exposure to the influence were continued longer than was sufficient to produce a local effect, this influence extended to the corresponding limb of the other side: thus, for instance, if one hind leg became *too much* influenced, the other hind leg partook of the same effect—if the fore leg were too much effected, then the other fore leg became so likewise, and so on throughout the whole body—a result which Mr. Nunneley mentioned as strongly corroborative of his experiments with prussic acid, as detailed in the last volume of the Provincial Transactions, and strongly supporting the opinions of Dr. Marshall Hall on "reflex action." These views were illustrated by a series of interesting experiments before a highly respectable audience of medical men, on frogs and toads, in which, after immersion for a few minutes, the limbs became insensible, and were amputated in repeated portions without any symptoms of pain whatever.

The experiments which Mr. Nunneley performed before the meeting were perfectly successful and satisfactory; and if his views should prove to be correct, which we think very probable, they will give a new impulse to the use of anæsthetic agents, and enable the most cautious practitioner to use them without the danger which may attend their internal administration.

He stated that by this new mode of application to the hind legs of rabbits he had been enabled to amputate the toes without the least indication of feeling—that he was not prepared to state what was the best mode of applying it, or the exact quantity to be used, which obviously can only be determined by a very lengthy series of experiments, on different animals, which he is at present zealously pursuing, his principal object being to communicate the important *physiological local effects* of anæsthetic agents generally, which we believe have not hitherto been announced.]

A SYNOPSIS,

CONTAINING A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOREGOING PAGES OF THIS VOLUME; AND SHOWING, AT A GLANCE, THE MOST IMPORTANT INDICATIONS OF TREATMENT PUBLISHED BY DIFFERENT WRITERS WITHIN THE LAST HALF-YEAR. (ARRANGED ALPHABETICALLY.)

DISEASES AFFECTING THE SYSTEM GENERALLY.

Anasarca.—*General.*—Give digitalis in gradually increasing doses, until it acts decidedly on the system, watching the patient narrowly at least three times in the twenty-four hours. Begin with: (℞. Tinct. digital ♏ xv.; potas. acet. ʒi.; sp. juniper co. ʒij.; decoc. scoparii co. ℥xiv. M.) twice a day: and increase the quantity of digitalis by five drops daily, until its effects are marked. Then give wine, ammonia, and camphor, with animal food. (Mr. M'Donald, p. 32.)

Give diosma (Buchu) thus: ℞. Infus. diosmæ ℥vj.; sodæ bicarb., potas. bicarb., potas. nitratis aa. ℈ij.; syrup. aurant, ʒvj.; tinct. scyllæ ʒij. M. ℥j. ter die. (Anon. p. 32.)

Ascites.—Buchu is useful when given with such other remedies as the case may seem to require. (Mr. Hoskins, p. 33.)

Asiatic Cholera.—This disease is probably "a congestive ague of quotidian type." The collapse is not what is usually understood by that term; it arises from an active cause, from a *spasm of the capillary circulation*, and thus differs materially from the collapse produced by other and more usual causes. The spasm puts a stop to the action of the capillary circulation, and drives the blood into the great interior veins—hence the pain about the præcordia, and oppression of the heart, with congestion of the spleen, stomach, &c. Hence the treatment is to relax this spasm of the capillary circulation by *early blood-letting*. If this is done at the commencement of the congestion, it not only relieves the internal veins, but relaxes the spasm. Bleeding, however, must be adopted *early*, and not when the pulse is recovering, nor in the last stage; this would produce fatal collapse. It may seem contrary to all sound practice to bleed thus when the patient is pulseless, but in doing it in the early stage of congestion and collapse, consists the whole success. The medicine most successful is the following: Quinæ disulph. gr. xij. to ℈i.; ferri sulph. gr. ix. acid sulph. dil. ♏ xl. aquæ Oiss.; a wine glass full every quarter of an hour or hour. Do not give diffusible stimulants unless in combination with bleeding, or at the very outset; not after congestion is fully established. Employ cold applications rather than hot ones. (Dr. C. W. Bell, p. 95.)

Use neither internal nor external stimulants, nor artificial heat; but give calomel, and let the patient drink cold water. The first appearance of bile in the ejections from the stomach and bowels, is evidence of recovery. (Mr. M'Coy, p. 111.)—(Dr. King p. 108.)

"When the regular symptoms peculiar to the severe form of cholera had set in, medicine, I repeat, had very little influence upon it." (Dr. Watson, p. 112.)

Rub the patient well with a preparation of capsicum, over the abdomen, heart, and calves of the legs, several times a day, or at any time when there is coldness of the surface, or spasm; continuing the rubbing each time, till the patient feels the heat intolerable. The advantage of capsicum is that it does not blister. The following preparations may be used: Extract of capsicum made with alcohol, reduced to the consistence of jelly, ʒiij.; purified lard, ʒvi.; or concentrated tincture of capsicum, viz., capsicum pods, ℥iv., rectified spirit, ℥xij., macerate for a week and strain; two or four grains of delphinia or veratria may be added to this tincture, if thought needful. Or, as a household remedy, boil four ounces of capsicum washed to free it from chloride of sodium, in a pint of olive oil for six hours, and strain; rub with this as above. Dr. Turnbull, p. 112.)

Reaction takes place from the stage of collapse, by absorption of water into the blood vessels, and by vomiting. The best plan of treatment is to let the patient drink cold water *ad libitum*. (Mr. French, p. 107.)

If the disease commences like common bilious cholera, give acetate of lead and opium, or chalk mixture with opium and aromatic confection; give effervescing draughts with laudanum to allay the vomiting, keep the patient warm in bed, and the next day give a large emollient injection. But if the more severe and characteristic symptoms come on, or if there is great debility from the first, and cramps or coldness of the skin are observed, bleed largely, if the pulse will allow, and give a scruple of calomel with a grain of opium; after twenty minutes, give ten grains of calomel and half a grain of opium. When the calomel has acted well on the bowels, and large quantities of bile have been passed by stool, opium alone may be given, but not till then. If the disease is very far advanced when the patient is first seen, or if the attack has consisted in sudden collapse, almost without cramps, vomiting, or purging, apply stimulant liniments, sinapisms, &c., to the legs and stomach, rub hot turpentine along the spine, or apply a blister to the nape; give turpentine injections or mustard emetics, and *bleed;* giving also internal stimulants, punch, brandy, or carbonate of ammonia. (Dr. Massy, p. 108.)

FEVER.—*Typhus.*—In the low forms of fever, camphor, in doses of 3 or 5 grains, is a very valuable remedy, even where there is such cerebral excitement as to indicate local depletion, or when subacute inflammation in the alimentary cavities prevents the use of ordinary stimulants. Give Sir J. Murray's solution of camphor in his fluid magnesia, an ounce of which contains three grains of camphor. Use the same preparation as a lotion to prevent sloughing sores. (Sir Jas. Murray, p. 18.)

Camphor is an excellent remedy, and in low fever it may be given up to fifteen grains three or four times a day, combined with calomel and opium. (Dr. Copland, p. 19.)

When the system is worn out for want of sleep, and when there is much delirium, let chloroform be inhaled to induce sleep. Commence with 10 minims on a little sponge or pocket-handkerchief, and, if necessary, repeat it in a few hours, increasing the dose according to circumstances. (Dr. A. Fairbrother, p. 20.)

GOUT.—After cleansing out the bowels with proper aperients, give ten grains of phosphate of ammonia every eight hours, either in simple water, or in infusion of serpentaria with spirit of nitre. Order perfect rest and simple diet; cover the parts with fleecy hosiery and oiled silk; and give an aperient of pil. hydrarg. with pil. rhei. comp. every other night. (Dr. Edwards, p. 26.)

RHEUMATISM.—Give vinegar in rheumatic and arthritic diseases, under the following circumstances: when the colchico-alkaline treatment fails; when the patient is of middle age and of injured constitution; when there is epigastric pain after eating, foul breath, and fetid eructations; and when the urine is not cloudy; in short, where the disease is owing to a deficiency in the assimilating process and imperfect secretions, give a drachm of acetic acid, with tincture of jalap twenty minims, tincture of orange-peel a drachm, and a little camphor mixture, twice or thrice a day. (Mr. J. C. Atkinson, p. 29.)

Acute.—When there is no cardiac affection, give sulphate of quinine, from fifteen to thirty grains daily, and continue its use for a few days after relief is obtained. (M. Trousseau, p. 28.)

After subduing the more inflammatory symptoms of antiphlogistic treatment, give ten grains of phosphate of ammonia every eight hours. This medicine acts beneficially by decomposing the uric acid or urate of soda, which is formed in excess in gout and rheumatism. Instead of urate of soda, a very insoluble, we have thus formed phosphate of soda, a most soluble salt. (Dr. Edwards, p. 26.)

Chronic.—There is an excess of albuminous compounds in the system, and a diminished quantity of oily compounds: the direct addition of the latter, therefore, seems the most rational method of treatment. Cod-liver oil is to be preferred to other oils, because experience has proved its greater efficacy. (Dr. Hughes Bennett, p. 285.)

To relieve the lameness, employ electro-galvanism. (Mr. Christophers, p. 288.)

Scrofula.—Give proteine (prepared by Garden, Oxford-street, London), five or ten grains once or twice a day. (Mr. Tuson, p. 298.)

Scurvy.—Arises probably from a deficiency of potash in the blood, and is to be prevented or cured by the exhibition of some of the salts of potash, or those articles of diet in which these substances are found, as almost all fruit and fresh vegetables, milk, and fresh meat. If medicine is to be prescribed, give 10 or 15 grains of the phosphate, chloride, or tartrate of potash twice or three times a day either in water or with the food. (Dr. A. B. Garrod, p. 23.)

NERVOUS SYSTEM.

Chorea.—When the case is very violent, give tartar emetic in large doses: to an adult, half a grain every hour, for eight or ten doses, and afterwards at longer intervals. The same treatment may be adopted in some cases of violent cerebral excitement where the tone of the system will bear it. (Mr. Corfe, p. 55.)

Delirium Tremens.—Often arises from hepatic derangement, and is then to be treated by large and repeated doses of calomel, followed by brisk cathartics; improvement is sure to take place after the passage of a large quantity of dark, offensive bile. The use of opium may be almost wholly abandoned. When there is great excitement, empley cold affusion. In all cases of delirium tremens, however, take care to distinguish between that brought on in regular drinkers when they *leave off* their stimuli suddenly from any cause, and the other kind which is caused by a sudden and violent fit of drinking continued for a few days together. The first kind is from *exhaustion*, the second kind from congestion and even inflammation of the brain. The first kind is the true *delirium tremens*, the second kind may be termed *delirium ebriosorum*. (Mr. Corfe, p. 50.)

The inhalation of chloroform or ether vapour may be cautiously tried, when other remedies fail, in cases of habitual drunkards who have been deprived of their stimuli, or otherwise exhausted. (Dr. Anderson, p. 53.) (Mr. Warwick, p. 54.) (Mr. Hooper, p. 54.)

Epilepsy.—Relieve all gastric, enteric, and uterine irritations, by emetics, enemata, and emollient vaginal injections; prevent all mental and bodily excitement; do not suffer the patient to sleep too deeply, nor to be suddenly disturbed; and order simple and nutritious diet, cold sponging and friction, and fresh air and exercise. Watch the patient narrowly, when an attack is threatened; if the paroxysm approaches, dash cold water in the face: and if the fit comes on raise the head, expose the face and neck to the air, and dash cold water in the face to excite a forcible inspiration, by which the larynx may be opened; apply spirit lotion to the head, and warmth to the feet; and guard the patient against accident. (Dr. M. Hall, p. 41.)

Headache.—The hemicrania often met with in females, during the menstrual periods, arises from ovarian irritation. The treatment is by the daily use of hip-baths or sea-bathing: attention to the state of the rectum; abstinence from stimulants; mental employment; infus. valerian, c. digitalis, with pills of assafœtida; occasional local or general bleeding; or, when these fail, a general mercurial action, the cold baths being omitted. Locally, apply belladonna plasters, veratrine ointment, sinapisms, or blisters. When the patient is much exhausted, try a tonic treatment, giving quinine and valerianate of zinc, or when there is chlorosis, sulphate of iron with inf. valerian. For the headache occurring after hemorrhages or debilitating discharges, and often well marked in chlorosis, give steel, alone or combined with quina, and let the patient have full diet, and use the recumbent posture. Distinguish this carefully from *congestive* headache, the treatment of which is to induce reaction as soon as possible by the warm bath or an emetic, and if the headache persists, with hot skin, leeches to the mucous membrane of the nose (*not* to the temples,) blisters and diaphoretics. (Dr. P. Murphy, p. 279.)

HYSTERIA.—When there is a violent excitement, employ cold affusion. (Mr. Corfe, p. 58.)

INTOXICATION.—Wash out the stomach thoroughly with the stomach-pump, and inject three ounces of dilute acetate of ammonia draught. (Mr. Corfe, p. 49.)

NEURALGIA.—In cases arising from disordered stomach or bowels, or from exposure to cold, let chloroform be inhaled. It is contraindicated, as is also belladonna, when the neuralgia is owing to, or attended by cerebral affection. In other words, chloroform will probably be useful when the cause of the neuralgia is *ex-centric*, contraindicated when the cause is *centric*. (Mr. Sibson, p. 56.)

After exhibiting an anæsthetic, apply the actual cautery, heated to whiteness, over the affected part, and then cover it with compresses dipped in cold water. (M. Notta, p. 57.)

Apply electro-magnetism for twenty minutes every day. (Dr. Ranking, p. 57.)

PARALYSIS.—*Loss of speech from.*—Employ galvano-puncture. Introduce a metallic needle into the neck, directing its point towards the occipital nerve, and connect it with the zinc pole of a voltaic pile; hold the tongue on a sheet of the same metal, and close the circuit by presenting to that organ the knob of a brass director. Give several shocks daily. (M. Camino, p. 61.)

TETANUS.—*Idiopathic.*—Let chloroform be repeatedly inhaled, so as to produce sleep for some time. (Mr. W. H. Cary, p. 48.)

Traumatic.—Chloroform may be useful in temporarily relaxing the spasms and alleviating the patient's sufferings. (Mr. Worthington, p. 54.)

TOOTHACHE.—Apply *carvacrol* upon a piece of cotton, to the carious tooth. (Dr. Bushnan, p. 57.)

Apply to the carious tooth a piece of lint, dipped into a mixture of two parts of liquid ammonia, with one of some simple tincture. (p. 58.)

ORGANS OF RESPIRATION.

APHONIA.—*Hysterical.*—Apply saturated solution of nitrate to thick white blotting paper, and when dry, brush it over with compound tincture of benzoin, and repeat the application if necessary. When thoroughly dry, cut into slips, three inches by one and a quarter. Let one be lighted, and the fumes inhaled every night. (p. 93.)

ASTHMA.—*Spasmodic.*—Let chloroform be inhaled. (Mr. Chandler, p. 93.)

BRONCHITIS.—*In Children.*—In a mild case, give James's powder with a little calomel and ipecacuanha every four hours, and when, as perhaps in liquor cinchonæ, with small doses of hydrocyanic acid will do good. (Dr. C. West, p. 77.)

Laryngitis.—*Acute.*—Besides the ordinary treatment by leeches and tartar emetic, if there is œdema of the epiglottis, (indicated by there being difficulty in swallowing, and a sensation of a swelling in the throat, without affection of the tonsils,) blow powdered alum into the throat, through a quill. (Dr. T. O. Ward, p. 71.)

Œdema, *Of the Lungs.*—Occurs chiefly as one of the complications of that acute anasarca which often follows scarlatina, and is very dangerous. Bleed freely, and give large doses of tartar emetic. If the extremities are very cold and the surface livid, apply a large mustard poultice over the chest, and give a large dose of nitrous ether every two hours, till the patient rallies sufficiently to bear bleeding. Afterwards treat the general dropsy. (Dr. West, p. 92.)

Phthisis.—In tubercular diseases, the albuminous compounds are in excess in the economy, while the oily compounds are diminished. The most rational method of treating this state, especially as the assimilating organs are generally in a feeble condition, is by the direct administration of an animal oil; and experience points to cod-liver oil as the most practically useful. (Dr. Hughes Bennett, p. 285.)

Pleurisy.—In young and healthy adults, bleed in a very "determined manner and with an unsparing hand, until an impression is made on the system, until the pain and difficulty of breathing are removed, until the patient can draw a full breath, or faints;" and repeat it every three or four hours, according to the symptoms, not placing, however, much dependence upon the pulse. And give mercury to affect the gums; three grains of calomel with a third or half a grain of opium, every two or three hours. In the later stages, when the pulse is becoming weak, and there is much dyspnœa, or when the disease is becoming chronic, apply a blister. (Mr. Guthrie, p. 90.)

Pneumonia.—When occurring in young subjects of a healthy constitution, and combined as it usually is, more or less, with pleurisy, bleed promptly and freely, till the patient faints, and repeat it every four hours or oftener. And give tartar emetic, half a grain or a grain, every two hours, and even up to 12 or 20 grains a day. But in the stages of hepatization and infiltration, or when there is from the first irritation of the bowels, or abdominal tenderness, substitute calomel, given so as to affect the gums. Blister in the later stages of the disease, and when the pulse becomes weak, while there is great dyspnœa. (Mr. Guthrie, p. 90.)

In Children.—In *idiopathic* pneumonia occurring in previously healthy children, depletion is as important as in the adult; and is to be followed up by tartar emetic, given in doses of one-eighth of a grain every ten minutes, (to a child two years old,) till vomiting is produced, and continued every hour or two afterwards for twenty-four or thirty-six hours. Then if the physical condition of the lungs, and the general state of the patient, are found greatly improved, persevere with the medicine at longer intervals; but if the signs of inflammation are advancing, give mercury with small doses of antimony, and use larger doses of the latter to combat any sudden increase of fever or dyspnœa. If under any circumstances bronchial breathing is distinctly audible, the mercurial treatment is indicated; give, to a child two years old, a grain of calomel every three or four hours, and a little tartar emetic, except contra-indicated by sickness or debility; if the stomach and bowels are very irritable, use mercurial inunction. Do not blister, but employ stimulating liniments, by which there is no risk of those unhealthy sores which often follow a breach of the surface. If at the outset, large doses of antimony do not seem to be required, give two-thirds of a grain or a grain of calomel with two or three of James's powders every six hours. It is difficult to know when to give stimulants; but they are plainly indicated when there is much diarrhœa, the pulse becoming more frequent, and above all smaller and smaller, and the respiration, though slower, more laboured and irregular. Then give wine, even to a child at the breast, and ammonia in decoction of senega, or dissolved in milk, which conceals its pungency. If there is diarrhœa, let the nutriment be arrow root, or the *decoction blanche* of the French; otherwise give strong beef tea, or veal broth. In *secondary* pneumonia, especially if preceded by well marked bronchitic symptoms, antimony may sometimes be given at once, without bleeding. (Dr. West, p. 90.)

ORGANS OF DIGESTION.

Ascarides.—Give camphor in three or five-grain doses; a convenient form is Sir James Murray's solution of camphor in his fluid magnesia. (Dr. Copland, p. 19.)

Or the same preparation may be given in the form of enema. (Sir J. Murray, p. 18.)

Constipation.—When dependent upon loss of tone in the muscular fibres of the bowels, give acetate of lead three grains, with one-sixth of a grain of acetate of morphia, every four hours, and a turpentine enema every evening; or sulphate of zinc with opium may be tried. (Dr. J. C. Baddeley, p. 114.)

When there are hard impacted fæces, give eight grains of inspissated ox-gall thrice a day, and enemata of diluted gall to the amount of two quarts, night and morning. (Dr. E. Vanderpool, p. 115.)

Fistula in Ano.—Abscesses in the ischio-coccygeal space very frequently lead to fistula in ano, if they are not its constant cause. Transfix them with a bistoury as soon as ever they are detected. (Mr. J. P. Vincent, p. 173.)

Flatulence.—Ascertain whether it is accompanied by inflammatory irritation of the stomach and duodenum, or by debility of those organs. If the former, try ipecacuanha, sulphur, tartarized antimony, mercurials, magnesia, iodine, or nitrate of silver; or if there is torpor of the liver, give wine of colchicum with sulphate of potash or carbonate of magnesia,—or give infusion or tincture of arnica, or powder or extract of cusparia. If debility seems to be the cause, let the patient use freely any of the carminative waters, with bitters, and valerian, castoreum, and camphor. Or give enemata of oil of turpentine or assafœtida, which for expelling flatus from the bowels, are better than any thing else, except perhaps the infusion and spirit of armoracia. (Dr. Dick, p. 113.)

In flatulent distention of the bowels, arising from want of tone in the muscular fibres, give acetate of lead, three grains, with one-sixth of a grain of acetate of morphia every four hours, and a turpentine enema every night. (Dr. J. C. Baddeley, p. 114.)

Gastralgia.—*Chronic.*—Give a tea-spoonful of the following mixture immediately after each meal: acetate of morphia, one grain; distilled water, thirty drachms; syrup, nine drachms. (M. Valleix, p. 95.)

Hernia.—*Strangulated.*—Whenever there is any suspicion that the bowel or omentum is in a state of gangrene, the sac must certainly be opened, otherwise the division of the stricture external to the sac (Petit's operation) should be practised. (Dr. Duncan p. 163.)

Perform the operation external to the sac wherever it is admissible, and when it is necessary to open the sac, let the opening be of small size. In inguinal hernia, divide the skin and fascia only over the neck of the sac, making the seat of stricture the centre of the incision; if the neck of the sac is the seat of stricture, scarify it so as only partially to divide it, and so that it may yield to the application of taxis. In femoral hernia, also, interfere as little as possible with the tumour; let the centre of the perpendicular incision be between the upper part of the tumour and abdominal surface, and thus reach Poupart's ligament by carrying the finger from above downwards, and divide the stricture on a director introduced into the femoral ring. This operation is not so applicable in umbilical hernia. (Mr. Luke, p. 164.)

(Mr. Hilton agrees with Mr. Luke as to the excellence of Petit's operation. In femoral hernia, he advises a short vertical incision of the skin, or, if the tumour is large, a semilunar one, with the convexity downwards. p. 165.)

(Mr. Quain also agrees with Mr. Luke. p. 166.)

The muscles being relaxed by position, apply steady, gentle, and gradually increasing pressure with the hands for an hour or two, should so long a continuance of it be requisite. (Mr. Hunt, p. 166.)—(Mr. Pope p. 167.)

Administer chloroform. (Mr. Lafargue. p. 168.)

Administer chloroform during the operation. (Dr. Hughes, p. 168.)

In operating for hernia, after determining the seat of stricture, instead of cutting down on the tumour, make the incision directly over the part where the stricture will have to be divided. Thus not only will the sac not be opened, but the tumour not interfered with. The method is applicable to hernia of all species. But whenever organic disease exists, open the sac and leave a free passage for discharges. (Mr. Gay, p. 168.)

Mr. Gay's method answers well in umbilical hernia; the incision of the skin need only be very small. (Mr. Child, p. 170.)

Mr. Gay's operation is of great utility, especially in umbilical and femoral hernia. In cases of the latter kind, there is a triangular space on the inner side of the hernia, having the sac for its external boundary, and a line drawn from the spine of the pubes to the saphenous opening, internally. Cut into this space midway between these marks, feel with the point of the finger for the crescentic edge of the crural opening, and divide the stricture with Turner's knife directed upwards and inwards. (Mr. Coulson, p. 165.)

HÆMORRHOIDS.—*Internal.*—Excise the piles, not including any part of the membrane round them, even if there is prolapsus, and inject small quantities of a solution of sulphate of iron, a grain to the ounce, which will completely restrain the bleeding. (Mr J. P. Vincent, p. 170.)

Apply a strong ligature round the base of each tumour, embracing as much as possible of the mucous membrane; hold them tightly for about twenty minutes, and then remove the ligatures and return the parts. Afterwards give an anodyne every night, and an aperient every third day. (Mr. Taylor, p. 171.)

ILEUS.—After the first day or two, avoid all active purgatives. (Drs. Copland, Bright, and Todd, p. 160.)

Give a teaspoonful of sweet oil several times a day. (Dr. Copland, p. 161.)

In regard to operative measures, a case of ileus is hopeless at the time when an operation would be justifiable. (Mr. Travers, p. 161.)

There are cases in which recourse to operation is justifiable; but the establishment of artificial anus is the only practicable result, when the case does not prove fatal. (Mr. B. Phillips, p. 159.)

The operation ought to be more frequently resorted to, since in the majority of cases, it cannot make matters worse than they are, while it is likely to be successful, if a correct diagnosis can be made. This may be done almost with certainty, when the obstruction arises from "dislocation of the sigmoid flexure. (Mr. Mackenzie, p. 162.)

ŒSOPHAGUS, *Foreign Bodies in.*—A fish hook which had got fixed in the œsophagus, was extracted by piercing a pistol bullet, putting it on the line and allowing it to slip down; its weight removed the hook, the point of which sticking into the lead, it was safely brought up. (p. 384.)

PROLAPSUS ANI.—Keep the patient in bed, and daily after cleansing the bowel out, let a small quantity of solution of sulphate of iron, a grain to the ounce, be injected and retained. If the stomach will bear them, give balsams. (Mr. J. P. Vincent, p. 170.)

Apply a ligature round a portion of the mucous membrane, for about twenty minutes, and then release it. Give then an anodyne every night and an aperient every third day, the bowels being kept confined in the meantime. Afterwards the rectum pessary may be used for five or ten minutes after each motion. (Mr. Taylor, p. 171.)

Sea-Sickness.—As preventives, use active exercise and a tonic regimen for some days before embarkation; and when on board, keep on deck in the breeze, make large inspirations, wear a girdle, walk quickly till perspiration or fatigue is caused, or engage in some hard work, such as helping the sailors, hard work being the surest prophylactic; and take warm and exciting drinks, as tea or coffee with a little brandy, or diaphoretic medicines, opium, saffron, or acetate of ammonia. When the sickness has come on, nothing will do except palliatives: lie down with the head low, in a hammock or a suspended bed, and take stimulant aromatics, lemons, &c. (Dr. F. W. Fisher, p. 375.)

Rectum, *Irritable Ulcer of.*—Pass the forefinger of the left hand up the rectum, and direct a straight probe-pointed bistoury along it, beyond the very extremity of the fissure; then divide the ulcerated surface, and the fibres of the sphincter which are connected with it. In the after-treatment, advise the patient to get the habit of evacuating the bowels at bed time, instead of in the morning. (M. B. Cooper. p. 172.)

Tonsils, *Chronic Enlargement of.*—Apply nitrate of silver, either the solid caustic, or a solution gradually increased from three grains to two drachms to the ounce of water; paint the tonsils twice or thrice at one sitting, and then let the mouth be well washed with water. Make the application every two or three weeks. (Dr. Naudin, p. 94.)

Vomiting, *Of Pregnancy.*—Vide "Pregnancy."

URINARY ORGANS.

Chancre.—Use at first local emollients and baths; and when the syphilitic character of the ulcer is manifest, give diaphoretic drinks of decoction of sarsaparilla, or guaiacum, and then give the preparations of iodine, and use them externally in the form of local baths and fomentations. (M. Sisovics, p. 186.)

Diabetes.—The quantity of urine has been found to diminish under the use of spirit of turpentine, or of Chio turpentine. (p. 123.)

Gonorrhœa.—During the first few days, employ the abortive treatment. The patient having passed water, inject into the urethra a little of a solution of nitrate of silver, fifteen grains to the ounce, from a glass syringe; the only precautions needed are to press the lips of the meatus so as to bring them in close contact with the pipe of the syringe, and to make the injection pass suddenly, so as to take the urethra by surprise. Repeat the injection at the end of two days; but if the first application does not cause pain and sero-sanguineous discharge, followed by creamy suppuration, repeat it on the same day. At the same time give copaiba and cubebs. (M. Ricord, p. 183.)

During the first few days employ emulsions, local and general baths, and other antiphlogistic treatment. And when the inflammatory symptoms subside, give balsam of copaiba, with an equal quantity of nitric acid, in doses of twenty drops in water, gradually augmented; or give the balsam in pills, or emulsions. (M. Sisovics, p. 186.)

Lithotomy.—Employ a staff bent at a right angle three inches from the point, this horizontal branch having a lateral groove with a posterior opening; and a knife with a cutting edge as long as the groove of the staff, the back straight, and the blade of uniform breadth as far as the point, which should be shaped like that of a scalpel, but fitted to stab as well as cut. Let the upper part of the pelvis be raised by a pillow under the loins, so as to make the lower brim look obliquely downwards, and let the bladder contain very little urine. Having introduced the staff, feel with the left forefinger in the rectum for the horizontal branch of the staff lying over the prostate, and move it backwards and forwards till the orifice of the groove is made to project in the perineum, just at the anterior verge of the anus. Keep it steady in this position by means of the fore-finger placed within the rectum, and the thumb pressing on it externally, and commit the staff to an assistant with directions to keep it in the same position, pressing it down moderately upon the finger. Then with the knife held in the right hand, with the blade horizontal and the edge turned to the left side, penetrate through the skin and other tissues till the point is felt to be within the groove, and carry it directly onwards till arrested at the termination of the groove; then withdraw the knife, cutting first three quarters of an inch outwards and downwards, and then three eighths of an inch almost directly downwards. Without moving the staff, pass the finger into the bladder, and ascertain the size of the stone. If a more ample incision is needed, shift the staff a little to the left, and pass the knife, or a probe-pointed bistoury, on the right side of the staff, and on the top of the horizontal branch, into the bladder; and guarding the point by the finger of the right hand within the bladder, make the blade advance a little to the right by a sawing motion, taking care not to make the external incision unnecessarily large. Introduce the forceps and seize the stone before the staff is removed. (Dr. Buchanan, p. 173.)

PHYMOSIS.—Hold the prepuce firmly between the blades of a fenestrated forceps, and pass five or six sutures through the fenestra, and consequently through the prepuce, and then shave the latter off with a bistoury close in front of the forceps. Withdraw the latter carefully, divide the threads which pass above and below the glans, in their centre, so that there will be twice as many sutures as there were threads passed. Then tie the respective ends of the sutures so as to bring the skin in contact with the mucous membrane. (M. Ricord, p. 187.)

RETENTION OF URINE.—In both sexes the use of the catheter may often be avoided by the application of large cupping glasses to the superior and internal part of the thigh. (M. Vandenbroeck, p. 181.)

SPERMATORRHŒA.—When arising simply from debility, as it may do in persons of lymphatic temperament, and who have suffered in childhood from incontinence of urine, give tonics, as the ferruginous waters, use the local douche followed by friction, or transmit galvanic shocks through the penis and perineum; warm aromatic baths, ergot of rye 4 to 20 grains night and morning, or small doses of copaiba or turpentine are sometimes useful. When from great nervous susceptibility of the organs, give narcotics and sedatives, as camphor in 5 or 6 grain doses, and introduce every few days a medium-sized gum catheter, and allow it to remain for an hour or more, or practise acupuncture of the perineum. When dependent upon a sub-inflammatory condition of the orifices of the ducts, use tepid baths, give milk diet and light regimen, apply nitrate of silver to the parts, *sec. art.*, and let all exercise of the organs be abandoned. (M. Lallemand, p. 181.)

BONES AND JOINTS.

ARTHRITIS, *Chronic.*—Rub the joint once a day with an ointment composed of five parts of nitrate of silver to thirty-two of lard, and apply a poultice. Continue this treatment until the disappearance of pain. (M. M. Guerard and Briquet, p. 129.)

Caries.—Give proteine (prepared by Garden, Oxford Street, London,) five or ten grains once or twice a day, either as a dry powder or upon bread and butter. (Mr. Tuson, p. 298.)

Dislocations.—Old dislocations may be successfully reduced by proper management, even when alteration has begun to take place in the form of the bones. The proper method is to make gentle extension every day for a few weeks, so as to loosen the attachments of the artificial joints, and lengthen the muscles, nerves, vessels, and ligaments; so that when the final pull is given, there may be no risk of laceration. When this has been carried sufficiently far, reduce the dislocation, and keep the parts tied up for a fortnight or thereabouts; then employ passive motion. (Dr. J. Stark, p. 125.)

Administer chloroform before making the reduction. (Mr. W. B. Page, p. 127.)

Fractures.—After rest has been employed for a certain time, it is often advisable that the muscles should be used, and some weight thrown upon the injured limb, as the best way to induce ossific deposit; the broken bone being of course protected by well adjusted splints. (Mr. B. Cooper, p. 124.)

Knee, *Luxation of the Semilunar Cartilage of.*—Place the patient on the affected side, with the limb bent, and then gently rotate the tibia on its axis, when the cartilage will slip into its place. Or it may spontaneously slip into its place during sleep. (Mr. Vincent, p. 128.)

Loose Cartilages.—Endeavour by careful manipulation to expel the cartilage from the field of motion, and prevent its return by a proper knee-cap. If the operation for radical cure is determined upon, it is best performed at twice. Press the loose body to the outer side of the joint, between the patella and external condyle, and keep it steadily in that position; insert a narrow-pointed bistoury under the skin at some distance, and press it onward till it reaches the loose cartilage; then turn the cutting edge of the knife towards the joint, and divide the synovial membrane to a sufficient extent, and force the loose cartilage into the subcutaneous cellular tissue. Withdraw the knife, and apply white of egg over the incision, and then a strip of plaster; put a splint behind the joint, to insure perfect rest, and apply evaporating lotion; and combat the slightest symptom of inflammation upon its first appearance. When the wound in the joint is healed, remove the loose cartilage by an incision through the skin. (Mr. B. Cooper, p. 129.)

Mollities Ossium.—Supply the wanting mineral ingredient, by giving bone powdered and mixed with bread, and at the same time draughts containing phosphoric acid, to convert the phosphate of lime into a more soluble salt, the biphospate. (Mr. B. Cooper, p. 124.)

Spine, *Distortions of.*—Endeavour to improve the nutrition of the bones, by the use of articles of diet containing a good deal of phosphate of lime, as beef and mutton, giving at the same time phosphoric acid, to render the salt of lime more soluble. Bottled porter will also do good, if it do not relax the bowels. Support the weight of the trunk by the simplest possible mechanical means, and put into gentle action such muscles as may counteract the unnatural direction the bones have acquired. Let such exercise in the open air be taken as causes the least fatigue, as riding in an open carriage, or sailing on the sea. (Mr. B. Cooper, p. 124.)

Synovitis.—*Gonorrhœal.*—Restore the gonorrhœal discharge by the application of warm fomentations over the genitals; and give bark and alkalies, combined with opium. (Mr. B. Cooper, p. 128.)

EYE AND EAR.

Cornea, *Sloughing of, from Defective Nutrition.*—Give wine and beef-tea, with bark, quinine, or steel; and attend to the bowels. (Mr. Bowman, p. 199.)

Corneitis.—Generous diet, pure air, and comfortable clothing, are generally required. As to local applications, apply none whatever in the early stage, except a tepid or slightly sedative lotion, to allay the pain. When the disease has become chronic, such stimulant applications as vinum opii, or solution of nitrate of silver, may be used, but very cautiously. Dilate the pupil occasionally by belladonna, either by applying the extract to the eyelids and brow, or by applying occasionally a piece of rag dipped in a solution of a drachm of good extract in eight ounces of water. Apply stimulants for the dispersion of the diffused opacity of the cornea which remains, but not till all inflammatory action has long disappeared. Solutions of nitrate of silver, sulphate of copper, or sulphate of zinc, will do; or a solution of iodide of potassium, ten grains to the ounce; or a camel-hair pencil dipped in water, and brushed two or three times on soap. (Dr. Jacob, p. 201.)

Deafness, *occurring in Scarlatina and Measles.*—Rub the fauces well with a smooth piece of alum twice a week, occasionally alternating it with nitrate of silver, solid, or in solution; cleanse the external meatus once a day with warm brandy and water, or a solution of iodine, or decoction of the bark of prinos verticillatus; keep blisters constantly discharging, placed behind the ears or on the arms, alternately; and give internally the muriate of lime, or iodine and its preparations, or syrup of sarsaparilla made after the old formula, to which may be added the root of rumex crispus, and the tinctures of the bark of prinos verticillatus and chymaphila umbellata. (Dr. Morrel, p. 204.)

Iritis, *Rheumatic.*—In the active form, abstract blood, purge, and attend to the function of the skin. Follow these measures by the administration of tonics, otherwise a tedious subacute stage will follow. On the slightest appearance of fibrinous effusion give mercury; and blister for opacity of the cornea. (Mr. J. Dixon, p. 201.)

Myringitis, *Subacute.*—Give mercury so as to produce a steady and gradual effect, and keep the mouth sore until there is a decided amendment; give the preparations of iodine; and apply counter-irritation over the mastoid process. If there is ulceration, touch the part daily with a solution of lunar caustic. To relieve the tinnitus aurium, give tincture of the flowers and leaves of arnica, beginning with fifteen drops of the tincture in a tablespoonful of infusion of arnica, with a little cordial tincture, thrice a day; gradually increasing the dose to thirty drops, unless headache or giddiness be produced, when the medicine must be discontinued. And for the arrest of secretion of the cerumen, apply the soft brown citrine ointment, in a melted state, to the external meatus, with a soft brush. (Mr. Wilde, p. 203.)

Ophthalmia, *Gonorrhœal.*—Keep the patient quiet, and in the dark, with the head raised, and give very low diet. Apply nitrate of silver to the affected surfaces, so as to produce a white film, and then wash the eye sedulously with warm water, and apply poppy fomentations. Repeat the cauterization thrice a day, or as often as the secretion, which was changed in character by the application, has again became purulent. Stop chemosis in the early stage, by first cauterizing, and then removing a portion of conjunctiva with curved scissors. If the chemosis reaches the phlegmonous state, scarify, but do not attempt to excise it. Apply leeches behind the ears, or in the course of the jugular; or if there is much febrile action, bleed from the arm. Do not use mustard pediluvia. In the decline of the disease, apply blisters to the nape, and use mercurial frictions. (M. Ricord, p. 198.)

Purulent, of Infants.—Lay the child on a table, and allow water to flow from a small tap through a tube over the surface of the eye during from ten to fifteen minutes, several times a-day.—(M. Chassiagnac, p. 198.)

Scrofulous.—Apply solution of nitrate of silver, (a scruple to an ounce of water), to the mucous membrane of the nostrils, at first every day, and afterwards every other day, or twice a week.—(Dr. Edwards, p. 202.)

The nitrate may be applied to the mucous membrane of the nostrils either in substance, or solution, or ointment; for the first week, night and morning; then every day: and afterwards, every second or third day. After cauterization, let the patient inspire deeply, to make the effect of the caustic as extensive as possible.—(M. Morand, p. 202.)

Tarsal Tumours.—Use a pair of forceps with one blade ending in a ring, and having a screw to fasten the blades together. Slip the ring portion beneath the lid so as to encircle the tumour, screw the blades together with the necessary degree of firmness, and evert the lid. Open the sac freely, and turn out the contents with a small silver spatula, or a Davielle's scoop; then apply a fine probe coated with nitrate of silver, over the interior, smear the surface with a little oil, restore the portion of the lid, and take off the forceps. (Mr. W. R. Wilde, p. 297.)

SKIN AND CELLULAR TISSUE.

Bedsores.—In order to prevent bedsores, moisten and oil a bladder, and partially distend it with air; wrap it up in a soft napkin, and place it under the part subjected to pressure. In the case of fractures, to preserve the heel from the effect of pressure, a bladder may be introduced beneath it in a flaccid state, and then inflated. (Dr. Purefoy, p. 294.)

Bunions.—The only successful treatment is to restore the great toe to its natural position, parallel with the others. This is best done by wearing a stocking with a compartment like the finger of a glove, to receive the great toe, and a shoe with a similar compartment constructed in its inside. Local antiphlogistic treatment may in the first instance be required. (Mr. B. Cooper, p. 130.)

Burns.—To those of the first degree, if not extensive nor occurring on the head and face, use cold applications; otherwise, apply flour or carded cotton, and let the dressings remain as long as cleanliness and the patient's feelings will allow. Treat burns of the second degree in the same way, previously making a minute puncture into any large vesicles. When of the third and fourth degree, apply lime-water and oil, poultices, or turpentine liniment and afterwards calamine cerate; and when the granulations are high, apply nitrate of silver, or strap with adhesive plaster, or sprinkle the surface with a powder of myrrh and calamine. The great point is to cover the parts well, to remove the dressings as seldom as possible, and when removing them to expose but little surface to the air at a time. During the stage of shock, give opium and stimulants, and apply warmth (to children in the form of bath); when reaction comes on, antiphlogistic treatment may be needed, but still opium is useful; and when there is profuse suppuration, bark with acids, opium and wine, with attention to the bowels, are indicated. (Prof. Cooper, p. 189.)

To slight burns, cold applications, flour, or cotton, are equally useful. To more severe ones apply lawn paper dipped in warm turpentine thickened with ung. resinæ; where there is free suppuration, use chalk ointment; and when the healing process goes on very slowly, apply a lotion with camphor mixture one pound, tincture of opium and solution of lead, each one drachm. Never apply escharotics. When the injury is so severe as to forbid all hope of recovery, envelope the entire person in cotton, as the most comfortable and convenient application. During the stage of shock, give stimulants and opiates; afterwards liberal diet and quinine. (Mr. T. M. Greenhow, p. 191.)

Apply flour of the best quality with a "dredger," and allow it to "cake," when detached, repeat the process till a healthy surface is left. When the burn is on the back, keep the flour in apposition by means of long flakes of carded cotton applied round the waist. Treat the ulceration remaining after severe burns by cer. calaminæ, except on the hands and face, where the use of flour may be continued." (Mr. Dorning, p. 192.)

Apply the best flour with a dredger, as above described, and when the caked masses come off, apply wetted lint and oiled silk. If cicatrization is tardy, use a weak solution of sulphate of zinc, instead of water; and if there are exuberant granulations, rub them lightly with a piece of sulphate of copper. Muriate of morphia is the best anodyne. (Mr. Liston, Dr. H. Barker, p. 193.)

Make the surface as clean and dry as possible, remove any vesications or loose cuticle; then apply, with a small sponge secured to the eye of a silver probe, a concentrated solution of nitrate of silver, (arg. nitr. ℈iv. acid. nitric. gtt. vj., aq., distil. ʒiv.) so as to form an adherent eschar. If on the back, after applying the nitrate, cover with plasters of ung. plumbi comp., and dress every third or fourth day. Re-apply the nitrate, if the eschars fall off too soon. (Mr. Higginbottom, p. 193.)

Cotton wool is more useful than flour. (Mr. Newnham, p. 194.)

In treating burns by cotton wool, never remove that which covers the surface of the sore. (Dr. G. Black, p. 194.)

Chilblains.—When of the first and second degree of severity, rub well with any of the following liniments:—Camphor liniment; soap liniment five parts, tinct. cantharid, one part; liq. plumbi diacet.; sp. vini. camph. two parts; liquor plumbi diacet. one part. To ulcerated chilblains apply stimulating dressings, as Peruvian balsam, solution of nitrate of silver, or of chloride of lime (Lisfranc,) or a mixture of liquor calcis and liquor plumbi diacetat. Treat gangrenous chilblains like other cases of gangrene. (Mr. S. Cooper, p. 197.)

Erysipelas, *Traumatic.*—Blood-letting can very rarely be borne; leeches are inadmissible from the irritation which their bites sometimes produce; and cold must never be applied in erysipelas of the head or face, for fear of producing fatal metastasis. The only remaining antiphlogistic plan is to act upon the secretions. For this purpose give the following medicines:—℞. Hydr. chlorid. gr. iss.; pulv. Jacobi ver. gr. iij. M. ft. pil.; and ℞. Magnes. carb. gr. x; sodæ sesquicarb. ℈i., vin. ipecac. ʒss.; mist. camphoræ ℥i. M. to be taken twice or thrice a day with a spoonful of lemon juice. If the symptoms are typhoid, substitute ammonia for the soda. Porter and generous support must be allowed; and, if there is much debility, wine or brandy. If there is much tension of the skin, puncture it, but do not make long incisions, unless there is extensive cellular sloughing. If the inflammation has great tendency to spread, apply lunar caustic or mercurial ointment round its borders. (Mr. B. Cooper, p. 106.)

Ganglion.—Pass a couching needle beneath the skin at some distance from the ganglion, puncture the sac in several places, and squeeze out the contents into the cellular tissue; then apply pressure, and adjust a splint, to insure perfect quiet. Small ganglia upon the palm may be punctured directly. (Mr. B. Cooper, p. 190.)

Gangrene, *Hospital.*—Distinguish from sloughing phagedæna, in which the sore appears similar, but which only occurs in isolated cases, and is almost confined to the lowest prostitutes. Separate the patients from one another, and if possible from the rest of the hospital. Apply undiluted nitric acid to the surface and edges of the sore, and a charcoal or common poultice. Give large doses of opium; if the appetite remains, allow meat with a moderate quantity of beer, wine, or spirits, and give quinine and ammonia as the stomach will bear them. (Mr. H. Coote, p. 294.)

Senile.—Lower the tendency to excitement throughout the system, by enforcing a strictly vegetable diet, abstinence from every kind of stimulant, and the maintainance of perfect quiet in the horizontal posture. Apply linseed poultices, and so long as nocturnal pains continue, give muriate of morphia freely. (Prof. Syme, p. 296.)

Leechbites, *Bleeding from.*—Roll a very small piece of lint into a hard knot, smaller than a pea, and wiping the orifice clean, place this little pad upon it, and draw a long strap of adhesive plaster over it. The elasticity of the skin, pulling upon the plaster, supplies the requisite pressure. (Mr. Vincent, p. 291.)

Nævus.—Having threaded a number of needles about twelve or fourteen inches apart from each other, on a long and strong ligature of dentist's silk, let an assistant pinch up the deseased mass, then introduce the first needle at a point just beyond the limits of the part to be removed, pass it through to the opposite side, and draw the ligature out sufficiency to leave an end for tying. Introduce as many more needles as may be required, in a similar manner, at intervals of about half an inch; then cut the ligature near to the eye of each needle so as to leave a series of loops, each embracing but a small portion of the mass to be removed; lastly tie the extremities of these loops respectively with each other. (Mr. Luke, p. 142.)

Ozæna.—Apply nitrate of silver in substance or strong solution every day; and use a weaker solution of the nitrate, or of sulphate of copper as an ordinary lotion. (Dr. Edwards. p. 202.)

Porrigo, *Scutulata*.—Take of Norway pitch 30 parts, turpeth mineral 15 parts, red oxide of mercury 15 parts, lard 100 parts. Mix. Apply night and morning. (p. 195.)

Snake-Bite.—Apply a ligature, whenever practicable, above the bite; include the bitten part between the blades of a pair of tenaculum forceps, raise it from the subjacent tissues, and cut it completely out with a scalpel; apply a cupping glass to the wound, or use suction; give stimulants, as brandy, wine, ammonia, or oil of turpentine; bleed, to relieve constriction of the chest, or pain about the heart or head; wash the head, face, and hands, occasionally in cold water; and prevent sound sleep for some time after the injury. (Mr. W. Bland, p. 296.)

Ulcers.—Give proteine, five or ten grains once or twice a day. (Mr. Tuson, p. 298.)

Callous.—Apply a large blister over the sore and the neighboring swelled part of the limb, and afterwards simple dressings to the sore. (Mr. Syme, p. 188.)

Phagedenic.—Having protected the surrounding skin by a thick coating of cerate, apply lint dipped in strong nitric acid, and afterwards simple dressings and an evaporating lotion. And give wine and bark, with a light nourishing diet. (Prof. Cooper, p. 195.)

Varicose.—Obliteration of the veins is not followed by permanent good. The best application is black wash; if the sore is in an inflamed state, begin the treatment by poulticing; or if there is a complication of the callous condition, blister. (Mr. Syme, p. 188.)

MIDWIFERY AND DISEASES OF FEMALES.

Abortion.—If, after a careful examination, we find the cervix preserves its normal length, figure, and thickness, we must try to prevent the abortion; but if the cervix is found shortened or distended, and the organ is assuming the oviform-shape, we must assist, by all safe means, the expulsive action. In making this examination, do not introduce the finger into the os. (Dr. Radford, p. 215.)

When there is severe flooding during threatening abortion, evacuate the liquor amnii, pass a conical plug into the os uteri, fill up the vagina behind it, and give one or more doses of ergot. (Dr. Reid, p. 229.)

Amenorrhœa.—The treatment is to be directed to relieve not only uterine disorder, but also ovarian excitement and irritation, both at the menstrual periods, and in the intervals. (Dr. W. Tyler Smith, p. 256.)

Deformity *of the Brim*.—it is proposed to turn the child, and extract by the feet, instead of performing embryotomy, or applying the long forceps. By this operation, the narrowest portion of the cone formed by the fœtal head is first engaged in the contracted brim, and the skull will usually become so indented and compressed in its biparietal diameter, as to allow of its extraction by such force as may be safely applied to the child's neck. Thus the best chance of life is afforded to the child, while, from the early period of labour at which the operation is performed, the mother is spared all the evils which result from protracted pain and long-continued pressure on the soft parts. (Dr. Simpson, p. 242.)

When the head is prevented from entering the brim of the pelvis by reason of the diminished diameter of the latter, turning should be had recourse to, in preference to embryotomy or the long forceps; and should be performed early,—the earlier the better. But it should not be undertaken when labour has been long continued—when the strength is exhausted—the uterine energy gone, or the uterus is painfully and permanently contracted; nor is it recommended when the child is dead, the pelvis very much contracted, or when the accoucheur is not familiar with the operation. (Dr. James Wilson, p. 242.)

(Dr. Murphy also has tried this mode of practice, and approves of it, p. 251.)

Dysmenorrhœa.—Let chloroform be inhaled when the pain is severe. (Dr. Bennet, p. 322.)

Elongation *of the Cervix Uteri.*—At first, when consisting chiefly in passive congestion, it may be relieved by rest in the horizontal position, and the introduction of a soft sponge to support the parts, and the internal use of iodide of iron, or of mercury. But if permanent hypertrophy remains, excise the part: the operation is perfectly safe and easy, in the absence of specific disease. (Dr. J. M. Coley, p. 260.)

Mammary Abscess.—Besides evacuating the matter, and applying fomentations and poultices, it is of the greatest consequence to stop the secretion of milk. For this purpose give a hydragogue purgative, as sulphate of magnesia in compound infusion of roses, to which, when there is much hectic and debility, quinine and dilute sulphuric acid may be added. (p.293.)

Placenta Prævia.—The practice, recommended by Dr. Simpson, of entirely detaching the placenta, and leaving it, is likely to be of use in very many instances; as where there is such an unyielding condition of the soft parts as to prevent speedy delivery, or where the flooding has been going on for a considerable time, and the practitioner, on his arrival, finds the bleeding still continuing, and the woman so much exhausted that the sudden emptying of the womb would be dangerous. But this plan by no means supersedes delivery by turning, which, if adopted in a prompt and energetic manner, is a safe and proper method of treatment. (Dr. Waller, p. 232.)

The practice of detaching the placenta is inapplicable in the most formidable cases,—is as difficult to accomplish as turning, and does as much violence to the uterus,—is almost certainly fatal to the child, and affords no increased chance of safety to the mother. If the cause of hemorrhage is ascertained to be placenta prævia, rupture the membranes, introduce the hand, and turn and deliver the child,—provided that the os is sufficiently dilated, or easily dilatable; if it is not, wait, and act upon general principles, till sufficient relaxation has taken place. (Mr. Newnham, p. 236.)

When copious and repeated hemorrhage occurs in the eighth or ninth month of pregnancy, and signs of labour do not appear, evacuate the liquor amnii, pass a conical plug into the os uteri, fill up the vagina behind it, and then give one or more doses of secale. The plug occasions the formation of a large coagulum within the uterus, the presence of which, combined with the irritation caused by the plug, excites uterine contraction. By the expulsion of the clot, the os is dilated, and we are then able to introduce the hand and turn with more facility. (Dr. Reid, p. 235.)

Polypus Uteri.—Torsion is applicable only to small soft tumours, and in other cases the ligature is preferable to excision. Apply the ligature by Gooch's apparatus with the double canula and windlass, and take care to apply the noose as close as possible to the bulbous part of the tumour, for fear of including a portion of the uterus. If there is much pain, and it continues after applying a warm stupe to the abdomen, and using the catheter, loosen the ligature. If there is much hemorrhage, plug the vagina. (Dr. Mitchell, p. 275.)

Very small polypi situated high up in the cervix, may be removed by an instrument made for the purpose, consisting of a very small, sharp scoop, like a carpenter's gouge, enclosed in a canula from which it is made to protrude by turning a screw. Larger polypi should be excised; but should first be twisted round several times so as to produce torsion of the arteries; or if they are very large, a ligature should be applied for two or three days, and when the circulation has become well strangulated, the neck of the polypus should be cut through above the noose. (Dr. Locock, p. 277.)

(M. Favrot describes a very simple and ingenious mode of applying the ligature to polypi. See p. 278.)

Prolapsus Uteri.—(Dr. James Reid, and M. Dubois, have each invented an instrument for the support of the prolapsed womb. See p. 274.)

Pregnancy, *Vomiting of*.—If all other means fail in its relief, premature labour must be induced. Dr. Churchill, p. 208.)

Premature Labour.—In order to bring on premature labour, introduce into the os uteri conical shaped sponge tents, made by dipping portions of sponge in gum arabic, and drying under very strong pressure. It is generally necessary to use several tents, and the last must sometimes be very large. They may be introduced without the speculum. (Dr. Simpson, p. 215.)

To bring on premature labour when there is alarming hemorrhage, evacuate the liquor amnii, pass a conically-shaped plug into the os uteri, filling up the vagina behind it, and then give one or more dose of secale. (Dr. Reid, p. 236.)

Puerperal Convulsions.—Let chloroform be inhaled. (Mr. Kite, p. 320, Mr. Fearn, Mr. Clifton, p. 321.)

Retroflexion *of the Uterus*.—In recent cases, replace the organ by the uterine sound, and let the woman lie for a length of time on the side or face: at the same time prevent accumulation in the rectum or bladder, and restore the tone of the parts by astringent injections. In more chronic cases, besides the above means, such treatment must be adopted as will relieve other co-existing disease, as congestion or chronic inflammation of the uterus or ovaries; and after the uterus has been restored to its position, it must be retained there by wearing one of Dr. Simpson's wire pessaries. (Dr. Simpson, p. 260, Dr. Beattie, p. 268, Dr. Hensley, p. 372.)

The best plan of proceeding, in the introduction of the sound or uterine pessary for retroflexion, is to place the female on her knees and elbows, with her face on a pillow. Then placing the forefinger of the left hand upon the os uteri, the point of the sound is very easily passed into the cervix, and by gently depressing the handle, as with the male catheter, the sound passes to the fundus uteri. (Mr. Braithwaite, p. 265.)

Rigidity *of the Os Uteri*.—Give emetic tartar, in doses of a quarter of a grain every four hours, and follow it by a full dose of opium. If this fail, make slight incisions in the os uteri. (Dr. Lever, p. 240.)

Mechanical dilatation by the fingers is more advisable than the use of tartar emetic. (Dr. Murphy, p. 240.)

When there is a hot skin, and quick full pulse, we may bleed, and nauseate with tartar emetic, give a turpentine or emollient enema to clear out the bowels, and then a full opiate, and smear the os and cervix freely with extract of belladonna. If these means fail, incise the os uteri on each side with a probe-pointed bistoury. (Mr. Barrett, Dr. Edwards, p. 241.)

Let chloroform be inhaled. (Mr. Brown, Dr. Arnott, and others, p.p. 319–320.)

Of the External Parts.—Let chloroform be inhaled. (Dr. Rigby, Dr. Murphy, and others, p.p. 318–320.)

Sterility.—When it is due to a contracted state of the os and cervix, let the parts be dilated by the use of the metallic tents; or, if the effect of these proves to be only temporary, by the division of the anterior lip of the os uteri and corresponding part of the canal of the cervix. At the same time if the os uteri is ulcerated or granular, let nitrate of silver be applied *sec. art.*, and let the general health be improved by the use of such tonics and alteratives as seem best adapted to the case. If sterility depends upon oophoritis, in addition to the general tonic treatment, local antiphlogistic measures, leeching, &c., will be required. And if retroversion of the uterus be the cause, it must be remedied *sec. art.* (Dr. Rigby, 216.)

Varicose Ulcer *of the Os Uteri*.—Bleed from the arm, and cup, or apply leeches; confine the patient strictly to the recumbent posture, and give three to five grains of calomel, with hyoscyamus or opium, followed by a saline aperient. Apply to the ulcer at first a strong solution of nitrate of silver, and afterwards the solid caustic: and if there is much discharge of blood, apply strong solution of sulphate of zinc with vin. opii and tincture of matico. (Or gallic or tannic acid, in the form of solution or ointment.) (Mr. Whitehead, p. 257.)

MISCELLANEA.

Adhesive Plaster.—Liquid India-rubber spread upon calico, soft leather, or vulcanized caoutchouc, forms an excellent kind of adhesive plaster, less irritating than the ordinary plaster, and equally or more adhesive. (Mr. D. F. Eyre, p. 292.)

Chloroform.—Use the chloroform made in Edinburgh, in preference to that generally met with in England. (Dr. Clay, p. 314.)

Employ an inhaler; and do not let complete insensibility be produced in less than two or three minutes. (Dr. Snow, p. 306.) Let the vapour be largely diluted with air for the first few inhalations; and do not continue the inhalation one instant after the pupils, previously contracted, have begun to dilate, remembering the cumulative property which the vapor possesses. In neuralgia, it is unnecessary to produce unconsciousness, if the pain previously disappears; in chorea, delirium tremens, &c., the state of sopor should be produced; while in hernia, dislocations, or tetanus, where complete muscular relaxation is desired, the inhalation must be continued till coma supervenes, but then discontinued as soon as the necessary effect is secured. (Mr. Sibson, p. 305.) Do not apply the handkerchief quite close to the face; and remember, that as soon as slowness of respiration or a degree of snoring is produced, it is only necessary to continue the inhalation at intervals, so as to keep up the sopor. In midwifery, a profound state of insensibility is not needed, except when we wish to turn, &c. The best way is to give a large dose at first, so as to get the woman fully under its influence, and then by withdrawing the handkerchief diminish the sopor, till the head is passing the vulva, when a deeper anæsthesia is required. (Dr. Simpson, p. 312.)

Do not exhibit chloroform when there is any disease of the heart, aneurism of the great vessels, threatening dyspnœa, or tendency to engorgement of the lungs. (Mr Wakley, p. 306.) Do not give chloroform in a state of extreme shock. (Mr. Curling, p. 311.)

When alarming symptoms arise from the use of chloroform, remove the handkerchief, or inhaler, and admit air freely to the face; do nothing else, except sprinkling cold water on the face, or otherwise trying to excite inspiratory acts; above all do not try to make the patient swallow anything when in a state of insensibility. If further means are required, resort to artificial respiration. (Dr. Simpson, p. 327.) If respiration becomes suspended from the use of chloroform, we must establish artificial respiration, and, in some cases, abstract two or three ounces of blood from the jugular. (Mr. Sibson, p. 305.)

Disinfection.—Pound the well dried raw bean of coffee, and strew it over a moderately heated iron plate till the powder assumes a dark brown tint; it will then remove almost any noxious effluvium. (M. Weber, p. 304.)

Electricity—A convenient form of application is by simple friction with "the electrical cloth," a species of *pyroxyline*, made by digesting cotton or linen cloth in nitro-sulphuric acid. (M. Meynier, p. 289.)

Ether.—Ether is much preferable to chloroform for producing anæsthesia in children. (Dr. Snow, p. 306.)

Ether is more suitable than chloroform, in persons whose powers are much depressed, and in those cases in which we desire to prolong the insensibility for some time, or in which we wish to obtain muscular relaxation. (Mr. Curling, p. 311.)

In extreme exhaustion from hemorrhage, ether is more applicable than chloroform. (Dr. P. Smith, p. 323.)

Ligatures.—Fibres torn from the sinew of the deer, and twisted to the required strength, may be used, and when tied, both ends may be cut off, in the expectation that the knot will be removed by absorption. (Mr. Wragg, p. 294.)

Operations.—Before undertaking an operation, ascertain well the state of a patient's health, as to the existence or absence of organic disease, the condition of the bowels, state of the urine, &c. And always employ preparatory treatment for some time previously to subjecting a patient to even the most trivial operation. (Mr. B. Cooper, p. 140.)

Ventilation.—A cheap and convenient mode of ventilating a room, is to make a hole through the wall into the chimney, two or three inches in diameter; nothing more is required. The hole may be concealed by a picture hung diagonally, or any similar contrivance. (Mr. Small, p. 302.)

Vesication.—Is easily affected by putting six drops of a mixture of one part of liq. ammon. fortissim., and two of olive oil, on the woollen side of a bit of spongio-piline, and pressing it against the skin for about ten minutes. (p. 302.)

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THE

RETROSPECT

OF

PRACTICAL MEDICINE & SURGERY,

BEING

A Half-Yearly Journal,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

Edited by

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SYNOPSIS.—INDEX.

PRACTICAL MEDICINE,

&c , &c.

DISEASES AFFECTING THE SYSTEM GENERALLY.

ART. 1.—NATURE OF EPIDEMIC AND MALARIOUS DISEASES.—By SIR JAMES MURRAY, M.D.

[The following is an abstract of the conclusions drawn by Sir James Murray from a series of investigations and experiments made by him some years since; and from which he has been led to abandon the ordinary doctrines of malaria.]

1st.—I consider that the exciting cause of epidemics, which is called *malaria*, is not "bad air" at all, as the name implies.

2nd.—That marsh miasms, gases, or effluvia of vegeto-animal matters or putrid emanations, are not, as is commonly supposed, the exciting causes of agues or other diseases called malarious.

3rd.—That in denying the usual doctrine of marsh miasmata, I do not deny that general "malarious" ailments proceed from terrestrial, paludial, or atmospheric emanations of active, dangerous, and subtile qualities.

4th.—But I consider these noxious emanations are disturbed *electro-galvanic currents* and accumulations, sometimes positive, sometimes negative, causing a want of electrical equilibrium in human bodies.

5th.—That these electric agencies are untowardly excited or set free from soils of fens or marshes, drains and sewers, by the known effects of evaporation, chemical action and infiltration of decomposing substances and putrid deposits, or from foul waters, among minerals, ores, metals, and dissimilar strata of soils and sub-soils, and also in wet lands, or during rainy seasons, after long-continued absorption by the earth of solar heat.

6th.—That as it is notorious that there are more insalubrious dry and high places in the Roman Campagna affected with malarious diseases than wet and low situations, I consider that in such elevated and arid spots, long noted for insalubrity, there is emitted from the earth's surface an untoward emanation of electro-galvanism, with its concomitant lethal agent called ozone, set free by causes operating within the soils of that locality, either by the juxtaposition of strata of dissimilar materials, acting electrically upon each other, or by the infiltration of subterranean streams or mineral waters, and by internal heat and consequent liberation of steam-electricity; or by some other agents, acting upon materials contained in the ground, analogous to the manner in which we operate upon artificial substances in a galvanic apparatus.

7th.—That in some of the thousand ways in which electro-galvanism is produced in the earth or air, its undue influence (under certain circumstances) disturbs the natural electricity of human beings, particularly when recumbent in contact with the ground, or on beds near the earth.

8th.—That this disturbance, either in the relative quantity of electricity itself, or in the due proportion of the positive or negative (fluids,) alters the condition and functions of the human nerves, and probably the relative state of the particles, and the polar relations of the atoms or corpuscular molecules, and at all events is capable of exciting or depressing the vital functions, and of acting chemically on the circulating animal fluids. This is obvious near rivers, and during east winds, the agency of passive or negative electricity, then, and there, inducing diseases of debility.

9th.—That these untoward galvanic agencies account more clearly for the specific cause, specific symptoms, and specific cures of some classes of complaints, such as intermittents, than the hitherto assumed action of *marsh miasmata*, which are supposed to be so various in their nature. In regions in which there are no fens or marshes, such as the Island of Ascension, &c., the agues incident to strangers are the same as where morasses are extensive; in both circumstances the disorders occur at particular seasons, are confined to particular situations, and require particular and identical treatment.

10th.—That the doctrine of marsh miasms is untenable, because malarious diseases attributed to them are common where there are no marshes, and because domestic animals are in general perfectly healthy, whilst human beings fall by thousands, which surely would not be the case were noxious miasm inhaled into the lungs during respiration.

11th.—The immunity of lower animals seems to rise from the comparative density of their integuments, rendering them less liable than men to the influence of electric accumulations, galvanic currents, or the disturbance of the (natural) fluid in them by induction. The hairs or wool being wet at night, serve as pointed conductors, which diffuse or dissipate opposite electrical currents into the earth or air, and prevent their effects on the small brain and nerves of domestic animals.

12th.—That the general immunity of blacks (even those who have long lived in our climate) from malarious diseases, appears to prove that inspiration of malarious air by the lungs, is not absolutely noxious, and that the cutaneous texture, oily secretions, and non-conducting varnish of their daily anointing and painting, render their skins less susceptible, or more repulsive of electric agencies, than the integuments of whites. The black colour, as it absorbs heat sooner than white, may also make a difference in the electric conducting power. Even a black silk thread, ribbon, or stocking, presents very different electrical phenomena from those of white twist, or white fabrics of the same texture.

13th.—That this doctrine of the electrical origin of malarious diseases enables us to approach much more nearly to salutary means of prevention than the old theory of inhalation of miasms wafted in the air can lead us to apply preventive measures against.

14th.—That, with this view, in order to enable colonies to be planted upon the Campagna di Roma, and other insalubrious or desolate regions, I proposed to *drain some suitable sites thoroughly;* to place a horizontal zinc or copper rod or tube in each drain; to connect these cross-wires or tubes with two or more upright conducting or lightning rods; to carry away excess of electricity outside the habitation, and not to permit its passage up or down through the house or tenement, or through the bodies of its inmates.

15th. That many trials have convinced me, that houses, when built upon such insulated platforms, floored with non-conducting compost of asphalt or bitumen, and protected above and below from electric currents by copper tubes or wires, are comparatively healthy in all situations. These insulated chambers prevent the natural electricity of the bodies of men from being untowardly augmented, diminished, or irregularly distributed through them, by the *abstracted* or the *excited* electricity either of the earth or of the air, as I have many times witnessed.

16th. That as many failures have occurred to common protecting rods for want of moisture in the ground, in dry seasons and arid elevations, I have found hollow pipes such as our copper gas-tubes, to present several advantages as lightning rods: by terminating below in the horizontal pipes or drains containing water, and by being always wet inside by the rain contained in them, their efficiency is secured.

17th.—That having secured a perfectly *drained area or platform* for a house or houses, I lay over the arches of the drains a solid floor of Roman cement, on brick or stone-work; and when the tenement is erected, and this platform is perfectly dry, I make it hot by a fire laid upon it. Whilst still hot, I spread over it a melted layer, about four inches thick, of asphalt and pitch, mixed with fine dried and sifted powder of Spanish clay. This makes a floor which does not crack, and which is almost impervious to moisture, or to passes of electric currents, either from the air above, or from the earth below.

18th.—That in building the walls in the first instance, a layer of sheet lead is laid in pitch and tar compost, on a level with the intended floors, with which layer the insulating compost abovementioned is made to unite, when making the non-conducting floor after the building is finished.

19.—It is too tedious to detail in this abstract, but I have devised a ready insulating medium for existing walls and buildings, and also for raising small tubes and pipes from house-drains into the air, higher than the chimneys of houses, or spires of churches, to serve as efficient *lightning rods*, and allow odious smells and hydrogenous gases to be blown away in the higher regions of the atmosphere.

20th.—This principle of insulating the areas or ground upon which the buildings are erected, is intended for habitations, hospitals, barracks, and all public or private edifices in malarious localities, and particularly in those places where insalubrity is prevalent and dangerous. In such desolate situations, the inmates may in a great degree be preserved from the direct action or disturbance of electric passes, up or down, through the apartments or places of rest.

21st.—That this precautionary insulating measure is also well adapted to diminish the damp prevailing in many basement stories of houses, and, by rendering the air of the apartments dry, and therefore non-conducting is calculated to diminish the danger of moisture, and many of the other evils commonly associated with the old or current theory of marsh miasms.

22d.—That for so-called malarious districts, wet floors, or low places, a thick layer of dry lime, fresh from the kilns, produces very favourable galvanic changes; abates the low indication of negative electricity of these places for the time; puts a speedy end to several chemical changes going on in sewers and soils; and tends very much to ameliorate the atmospheric condition of the insalubrious habitations, in so far as electro-galvanic currents and accumulations are concerned. Dry lime *is a non-conductor*, and has been useful in absorbing the moisture of damp rooms, and thereby diminishing their power of carrying electric currents to or from the inhabitants.

It had long since been proposed by Dr. Priestley to electrify a great number of patients at once, by placing them in a chamber raised upon glass feet.

Mr. Ellis recommended, in 1831, that persons seized with cholera should receive their medical treatment in beds placed upon glass bottles, and be supplied with their remedies in glass vessels. All these ingenious suggestions were proposed for the use of persons already diseased; but my desire is to *prevent persons from being epidemically diseased at all*, as far as can possibly be accomplished. The above able gentlemen have suggested means of *cure;* I recommend measures of *prevention*. Their propositions were never carried into effect; whereas my insulated houses were *tried*, and saved the inmates from attacks of disease in places where labourers, unprotected, fell by dozens in faintings and fevers, from want of sufficient electricity to sustain the natural balance. Persons insulated by a very bad conductor, such as a floor of cold asphalt, and by *clean dry flannel, or other insulators*, cannot readily communicate electricity to the earth, nor receive electricity from it, if the air of the apartment be dry, and free from filth, mist, or vapours.

The following may serve to convey an outline of my reasons for insulating public and private buildings: A cloud strongly charged with positive electricity over the individual, will attract his negative electricity upwards, and repel his positive electricity towards the earth. After the cloud is discharged, passes away, or is neutralized, the two elementary fluids rush towards each other into the centre of the person's body. The opposite currents of the two elements often kill instantly. In milder cases, such electrical disturbance affects the animal fluids, as it affects beer in the cellar, or milk in the dairy.

I consider that men's bodies, between the atmosphere and the earth, represent the chain of a Leyden jar or of an electric machine, conducting negative electricity from the outside of the jar to the ground, or supplying positive electricity from the earth to the rubber. Were the surface of the floor well *insulated*, the chain could not readily give or receive the currents which otherwise pass through it. Men, in like manner, may be saved in towns, camps, and houses from being made the vehicles of currents which are quite capable of deranging the mechanical order, the chemical action, and the physical function of every atom and organ of the human body.

23d. That "*marsh miasm*" is a misnomer, and a weak invention to cover want of knowledge—a "*mysterious emanation*," supposed to arise like a spirit from the fenny deep, and to infect air, soil, and water. A "*pestilential something*," reputed to be *malaria* itself. But no chemist has yet separated this "*germ* of *evil*" from the marshes in which it is thought to be engendered.

24th. That early in life a believer in these misty delusions of *marsh poison*, I did hope that improved tests and apparatus would arrest the "*gas*" and detect its composition. But continued trials during twenty years all failed to render it tangible. As yet, there has been no analysis of this "*pest*," although its sway is dreaded alike in the lowest valleys and on the highest hills.

25th. That no doctrine can be more mischievous than this of "*miasms*," for if there be such a poison *sui generis* wafted about in the air we breathe, there can be no precaution by which we may hope to ward off such an enemy while it continues unknown and unseen.

26th. That no harm can result from any attempts to overturn the faith that *was* in us, and to believe in some other power capable in various ways of being felt, seen, heard, or understood. If, therefore, we come to ascertain that electricity at rest, or electricity in motion, or that some of its modifications—galvanism or magnetism—can induce *a broken balance of electrical equivalents* in animals and plants, we may more easily devise means of warding off a *known power*, and preventing its transit through the conducting materials of living beings.

27th. That while the relations of electrical influence to the laws of life are universally admitted, the very existence of marsh miasms may be well denied. An able writer observes, that "their nature is not known; neither their physical nor their chemical properties have been ascertained. Even their presence is known only by their effects on the human constitution; no other test of their existence has yet been discovered. Some conjecture that this poisonous gas is carbonic acid, others that it is azote and oxygen; but chemistry has yet to discover whether this poison be simple or compound, as well as by what test, other than its action on the human body, its presence may be determined."

Were miasms of ponds and fens, of drains, sewers, and swamps the exciting causes of cholera or agues, this pestilence, wafted in the fleeting winds, would be just as variable in its effects as the wind itself. We should then have every possible shade of suffering, but no parallel epidemics. Every variety of *inhaled poisoning* would prevail at the same time and place. *But, on* the contrary, intermittents and all symmetrical diseases induced by symmetrical causes, are similar in character, and no two of them prevail in the same place and at the same time. Definite causes produce definite effects, and it was justly observed in the late sanitary reports, "that cholera and typhus seldom, if ever, rage in the same locality simultaneously, although the fever track and the cholera track are identical."

28th. That by no hypothesis deduced from the theory of *miasms* can we account for the *known* fact that, in the Campagna di Roma, in Tuscany, Ceylon, and other places, localities are pointed out where malarious influence is insulated, and limited to defined spaces—as to one side of a hill, one range of a street, one end of a field, or even to one particular habitation. *Malaria*, tossed about in the air of Rome, will not account for one portion of the *Via Babuina* being infected, and not the other: nor will it explain why the dry and clean Pincian Hill, and the beautiful Monte Mario, are *unhealthy*, while the marshy streets and courts below are salutary; why the rich and well-planted grounds of the villa Borghese are insalubrious, while the flooded Piazza Navonna, the Velabra, and the Jewish quarter are safe, like other crowded towns of equal temperature or similar sanitary regulations.

29th. That it is well known there are, even in these climates, numerous small spots circumscribed by a distinct boundary, which have been noxious for ages. If this diseased state be owing to a want of equilibrium of galvanism in the earth or the soil of such places, it merits a series of rigid trials, to examine their condition to the utmost extent, and to divert or cut off the sources of unequal galvanic influence, where unduly exerted. It is also known that, in various situations, physicians cannot readily cure or relieve certain nervous or rheumatic complaints, owing to causes which are undoubtedly electrical. This renders the removal from such localities absolutely necessary to sensitive patients, a change of air to whom is *change of electricity*.

30th. That the condition of low decomposing or fermenting places themselves might in many instancs be improved by the means hereafter recommended; but to carry out in detail experiments and plans on a sufficient scale should be the work of *governments* or *municipalities*, not of an individual. To arrive at conclusions of absolute certainty, experiments require to be instituted on an enlarged system. It is, however, fortunate that the chief means here pointed out will well repay their cost and trouble by the diminution even of the former imputed causes of "*malaria*." There is, therefore, the less necessity to dispute about the existence or non-existence of *marsh miasms*, if we can prevent or abate the desolation attributed to their influence in cities, towns, and marshy districts.

31st. That whilst the nature and even the very existence of *marsh miasm* as a poison, sui generis, are without proof, demonstration, or reasonable explanation, the connexion of electricity with all the agencies of nature is unbounded and undeniable. Its power is equal to the production of every effect here suggested. It is able to separate and again unite the elements of water—to tear metals from their oxides—to shake the clouds in thunder, and to operate in developing the evolutions of crystals. In its form of currents, it contorts the muscles of lifeless animals, and it flies, in its condensed form, instantaneously through a circuit of many persons, producing a manifest shock in them all.

32d. That the physiological effects of galvanic electricity are such as scarcely to admit of any limit to its endless influence. We are warranted, from analogy, to ascribe its agency in passing through the human body to a *sudden disturbance of the electric equilibrium—to an energetic or a depressing agency on the nervous system—to a partial decomposing or disorganizing power over the polar or chemical state of the atoms of our solids and fluids, and to oscillations of them.* Its manifest phenomena in man are awful to contemplate. A small charge sent artificially through the spine compels the person to fall to the ground, deprived, for a short time, of all muscular power. If sent through the diaphragm, that muscle contracts, causing the person to emit a loud shout, or an involuntary laugh. Through the limbs, a dull pain directly affects the joints, owing probably to the resistance which the force meets with in passing from one bone to another, like the *ticking* in nerves, owing to obstructions in their conducting power. Through the head, the sensation produced by a slight charge is that of a stunning blow, with temporary blindness, loss of memory, and confusion of ideas; or through the body of an eel, it kills that creature, so tenacious of life. Even after death its action is evident, a human being killed by thunder rapidly blackens and putrefies.

33d. That we observe, by experiment, how various is the quantity of electricity required to charge different persons; the amount is shown by obtaining sparks of the same size from separate individuals when insulated. Even their capacities for electricity, and their conducting powers, vary considerably. It is little wonder, then, that endless diversity prevails in the ailments and sensations of persons who are so sensibly affected by what they call the state of the weather, damp, and change of winds. These three enemies are supposed to be the actual perpetrators of injuries, which, of themselves they have not the power to inflict. *They are only vehicles of the disturber:* they are not the *real exciting cause*, *they only conduct it.* They convey through the cold cottages of the poor, and the warm mansions of the rich, that invisible, subtle, disturbing agent, galvanism, which speedily probes and searches the bones, muscles, joints, and inmost organs of invalids, deranges the nervous functions, affects the animal spirits, and acts magnetically on the protoxide of iron in the veins.

34th. Nature employs but few means to accomplish many ends. Electricity can produce thousands of effects—it is heat, light, galvanism, magnetism, chemical action; or it is convertible into them. Its modifications constitute, in my opinion, that universal *æther film* which encircles all particles of matter, and preserves, by its powers of attraction and repulsion, the ultimate molecules of all bodies in their natural, relative connexion and condition.

35th. That it is very probable that this all-pervading agent is the force, or cause of the forces, called *vis vitæ* and *vis insita:* already it is recognized in certain animals as the *vis nervea.* Electrical *aura*, also, seems to be the *aura epileptica.*

36th. That as a definite proportion of electricity belongs, and is peculiar to everything, and as a natural quantity of it is essential to health, so, any excess, deficiency, or derangement of it causes corresponding derangement in living bodies. As the integrity of specific atomic relation is essential to the identity and preservation of all beings, so the natural integrity of electrical equilibrium cannot be broken, or have its balance disturbed, without an equal disturbance in all the functions influenced by definite electrical agency.

37th. That observations and experiments give reason to believe that there is a certain *defined amount, plus* or *minus*, (above or below the natural standard of electric agency,) capable of producing certain *defined diseases* in susceptible individuals. In such localities as have their natural quantity of electricity reduced, augmented, or disturbed to the *specific degree*, calculated to induce *specific disorder*, the effects of such derangement will be proportioned to the cause. The particular kind of epidemic will depend upon, and be equivalent to, certain assumed points in the scale of disturbed electricity.

38th. I have noticed that this regulator of the balance is broken on many occasions, *long before* the consequent break of health sets in; that the loss of electric equilibrium in the earth and air precedes the loss of healthy equilibrium in man; that, like the supposed incubation of some disorders, the reaction consequent upon the oscillation of animal molecules does not always advance, *pari passu* with the occasion of their agitation; that in certain constitutions the effects occur several months later than in others; *that* when the epidemic has set in, after the waves of positive or negative electricity had passed over or through a place, the epidemic has manifested itself long after the terrestrial or atmospheric condition of the district had been restored to a neutral state, either by the equalizing power of thunder between *plus* and *minus* clouds, or by both these being blown away by currents of the air.

39th. That it is only by careful atmospheric and telluric examinations we can learn the advent and cause of epidemics *before their invasion* ; and that after they appear we may sometimes find the electricity of the situation restored in its due quantity or balance.

40th. That from twenty years' practical experience in a meteoric and marshy district I have concluded that, as electricity, in all probability, is heat, or the active cause of heat, its laws hold similar relations to those of caloric. That as cold is the absence of heat, the same electrical ratio applies to cold also—that as water boils at 212°, strong nitric acid at 248°, oil of turpentine at 314°, sulphuric acid at 620°, and mercury at 662°—so, certain *steps* of electrical alterations or disturbances will reach certain peculiar epidemic consequences or points. Each particular *step* produces its own particular results in susceptible persons, and sooner or later, according to their aptitude or susceptibility.

41st. That, as we are taught by experience, some people are scarcely liable at all to impulses of galvanic inequality—some are very slightly so, and others slowly affected, or only after long intervals. We have also seen that some persons escape altogether the shocks or oscillations of galvanic passes; others slightly feel their premonitory signs or symptoms; whilst some withstand the *concussions* or derangements for weeks or months. I cannot believe that similar differences would result were *marsh miasms*, or poisons, (inhaled by breath) the exciting cause: such active poisons, if in existence, and capable of destroying strong men in a few hours, would bring every human being within their reach under their destructive sway, without omission or delay.

42d. That as free electricity very generally prevails in the air of most places, it may be asked, why *cholera* in man, and *blight* in vegetables, do not commonly prevail at all times. To this I reply, that the integuments, even of delicate human beings, are not susceptible of ordinary or slight electric passes, unless the part be moistened. The whole surface becomes moistened in hot climates by the dew at night, and hence I think that cholera or agues invade people at night, particularly toward morning, as we know that negative electricity reduces men in the rice-lands of Italy, and in the Maremma, to the most awful state of disorder. But were the cause, as said to be, *miasms*, extricated from fens by the heat of the sun, their lethal violence would, on the contrary, assail all persons by day. As multitudes labour in the fields *by day*, multitudes would fall by poison; but thousands escape the pest, provided they do not sleep in the air or on any ground floor *by night*.

43d. That I believe, to produce *certain grades* of epidemics, *certain stages* of galvanic disturbance must be in operation. But it is *seldom* that such rates of derangement traverse the atmosphere or globe, consequently, we have not cholera or intermittents in all places or at all times, although electricity, at rest or in motion, may be variable or disturbed to a certain extent in every situation. As we reach *definite degrees* of heat, to boil water or to freeze it, we must contend with a *definite degree* of disturbance in galvanic force, fit to inflict epidemic catarrh, and a *different definite point*, sufficient to occasion epidemic cholera.

44th. That I consider, to cause specific diseases similar in all respects and parallel in progress, some specific agent must be in operation; such agent must be capable of producing *peculiar symptoms or signs of derangement*, by exerting *peculiar proportions or quantities* of disturbing actions.

45th. That the latent galvanic equivalents in living things are seldom so much deranged as to damage the laws of life; mild points in the scale of disturbance inflict only mild corresponding ailments. Were we to assume by way of illustration, a symbol of figurative quantity, as the neutral, latent, or natural equivalent of atomic electricity in a man, and state the standard amount (say) at 10,000, or any other number of equivalents, then we might infer that if ten degrees be added, abstracted, or *disturbed*, some local epidemic would result to persons similarly struck in that situation at the same time. As the cause (only ten degrees) is not considerable in this supposed case, so the effects will be mild in proportion. Periodical and nocturnal returns of old pains, nervous complaints, neuralgia, or nightly rheumatism, would probably be the symptoms of disorders corresponding to such points of definite or atomic galvanic alteration.

46th. That when the east wind (almost always passively electrified) prevails—when stagnant rivers, ponds, sewers, cess-pools, filthy streets, and drains, fens or marshes, fed by charges of *decomposing* matters, create *galvanic troughs* of great extent and active energy—when their *intense emanations* flow in currents, and are linked to people by electric chains of vapour, damp air, wet floors, or filthy garments, then, as the disturbing forces are severe, the loss of electric balance is severe also. Should the derangement of the balance amount to forty, fifty, or sixty degrees out of the normal quantity, these points will correspond with the ratio of broken balance which may stand in relation to catarrh, epidemic influenza, diarrhœa, dysentery, fevers, and other local epidemics, similar in character under similar circumstances.

47th. That when millions on millions of horse-power of galvanic forces are hourly evolved in the sultry morasses and festering deltas of the hot east—when strata after strata of our globe are daily galvanised by communication or induction—when miles of excited earth transfer conduction to adjoining miles—when electric wave follows wave, flowing round in a zone of resistless disturbance—when a *belt* of such stupendous streams of untoward galvanism encircles the earth itself, which is the great source and reservoir of electricity, then it is no wonder that plants, fishes, birds, beasts, and men, placed over such an electrified girdle of the globe, should suffer, each according to their susceptibility and organization, and to the extent or continuance of oscillating currents. A hoop or circumference, broader than the peninsula of India, conveying long-continued electric concussions, and steam electricity under land and water, will carry the disturbing range to eighty, ninety, or one hundred degrees, every series pointing to different series of disorders.

48th. That there is reason to believe a disturbed cincture of the earth arrives and retires with the revolutions of this planet. Perhaps the time may come when the dreaded advent of these revolving sources of disturbance may be predicted by calculation, as the march of the cholera was estimated, in 1832, at the rate of about ninety miles per month.

It is, therefore, when the excited air above, and the exhausted earth below, attract and repel long interchanges of galvanic emanations, that greater and more dangerous pathological degrees of disturbance ensue, fit to derange the scale to the point of such vast loss of balance, as to indicate the exciting causes of typhus fever, sweating sickness, bubo plague, yellow fever, black vomit, and black death.

49th. Within and around our cities and towns we contrive the most extensive BATTERIES for extricating galvanism: we establish currents and counter-currents of the electric (fluid) and of its *vehicles*—viz., the noisome gases escaping up our pipes and drains. These foul airs rush up into our apartments, conducted by walls and floors, and carrying up torrents of overpowering galvanic emanations. The walls and atmosphere of the rooms being in general positively charged, induce negative passes from the human bodies within their range, and from the moist earth below, attracting the electricity of the persons present, if of an opposite, and repelling it if of the same, kind.

50th. That instant *and efficient* municipal means should be adopted to TAP and release the air, *ozone*, and other confined gases from our house-drains, sewers, and cesspools. Sewers near buildings can easily be *tapped* by inserting copper or iron pipes, and adapting existing spouts, so as to bring all the rain-water into the drains, and to allow dangerous vapours, loaded with *ozone*—another lethal product of electricity—and also undue electricity itself, to escape up the air-conduits. These air-spouts should be fitted to the buildings *outside*, at proper intervals, and ought to be inserted into the arch, roof, or top of the sewers, and be well secured in their upright position to walls, chimneys, steeples, or posts, so as to reach as high as possible above the range of the highest edifices. These air-spouts would secure the most perfect sanitary reform that sanitary laws can accomplish—viz., preventing filthy odours, and diverting and dispersing among the clouds disgusting gases and disorganizing electric concussions, or decomposing currents.

Lancet, Sept. 2, 1848, *p.* 250, *and Sept.* 23, *p.* 341.

[Sections 51 to 57 are occupied by Sir James in stating some facts upon which his conclusions are founded. He states that during many years he observed the diseases of an unhealthy district, in which a muddy river, receiving all sorts of impurities from a manufacturing town, formed an immense putrescent reservoir, from which all sorts of abominable exhalations continually proceeded. But he found that the alternations of the epidemic diseases which attacked the inhabitants exposed to these effluvia, bore a distinct relation to the variations in the electric condition of the atmosphere. He found too, as he states, by thousands of voltaic experiments, that the stagnant water spoken of, formed a "vast galvanic trough." He says,]

Upon being satisfied. by many trials and observations, that electro-galvanic *disturbance or want of equilibrium* was at least a *principal exciting cause* of these periodical or symmetrical diseases, I watched their origin and progress narrowly, and made many experiments on the waters, soils, and air of filthy and damp localities.

58th. The vast number of chemical trials which I conducted in these marshy valleys, all demonstrated, as far as can be proved by negative evidence, that there is no such *peculiar morbific agent* (*per se*) as that which is understood by the name of *marsh miasm* or paludial malaria. In most of these experiments, animal exhalations. *supposed putrine*, and organic remains, were traceable, with more or less of ammonia, and all the gases evolving in low fens or clay soils. But ammonia and all the other impregnations were found in most regions of the air in Ireland, England, France, and Italy, where no epidemic at the time prevailed.

59th. These results led to the conclusions which were afterwards confirmed by more extended researches in Italy. I found that when human beings recline upon moist ground, or on beds placed upon it, their *natural, latent, or neutral electricity* is disturbed or decomposed by the extensive surface of the body exposed to telluric attraction and repulsion of galvanic currents, conducted by the fatal chains of damp walls or floors, stagnant drains, filthy beds, or soiled clothing.

60th. In the places described, extensive evaporation, and energetic chemical action during the day, charged the atmosphere of the place with positive galvanic fluid. This surcharge passed through the moist conducting bodies of the people, into the earth, attracting their *negative* and repelling their *positive* electricity. Again, when during the diminution of the electric fluid of the air, before sunrise and sunset, the effervescing earth transmitted its excess upwards, through the persons so exposed, the neutral (fluid) in their bodies was disturbed, or the positive (fluid) was attracted to one side or extremity of the bodies. and the negative fluid repelled to the other side; and thus a process of attraction or repulsion exerted untoward oscillation in the bodies, brain, and spinal-cord, and in particular, in the great sympathetic system.

61st. From observations and analyses, I concluded that the insalubrity called "*malaria*" is neither a specific and peculiar miasm directly from water, nor land, nor mist, nor vapour alone; but that there is *something else in action* which may have a certain degree of relation to all these things, and therefore the former are suspected of being the *whole primary* cause, whereas I consider them but *secondary* agents. *Lancet, Oct.* 21, 1848, *p.* 444.

2.—ON THE TREATMENT OF WEST INDIA REMITTENTS AND INTERMITTENTS BY QUININE.—By Dr. D. Blair, Demarara.

When quinine is taken by an adult to the extent of thirty or forty grains, it produces certain cerebral symptoms, the constituents of which are a ringing noise in the ears, and more or less deafness. This set of symptoms, where there is no idiosyncrasy, indicates the saturation of the system by the medicine, as ptyalism does mercury, and may be conveniently known by the name of *cinchonism*. Rare instances occur in which hyper-cinchonism is induced by a very few grains of quinine, accompanied by many nervous symptoms, and formication so severe as to prescribe the use of the remedy. In some—and this may occur in cases which had hitherto been normal—cinchonism has not been induced till after the administration of seventy-two grains of quinine. Cinchonism is not peculiar to quinine: by other vegetable febrifuges, such as salicine, angustura bark, and biberine, cinchonism can be induced, but not with the same certainty as by quinine, neither in the same uniform series of phenomena, neither with the same harmlessness. Cinchonism seldom lasts longer than twenty-four hours, except in some cases of anæmia, in which the writer has known it continue upwards of a week. Quinine has been prescribed by the writer to patients of both sexes and all ages, and where ascertainable, almost invariably to cinchonism, during thirteen years, and probably to the extent of several thousand ounces of the sulphate; and during that time he has seen no case of danger from its effects, with the exception of three or four cases of imputed abortion. To many the muffled ears of cinchonism are not even disagreeable. Cinchonism is capable of superseding and suppressing that excited condition of the circulation and animal heat known as fever, except when depending on anæma, as symptomatic of inflammation, or its effects.

Quinine is purely a febrifuge: instead of being a tonic or stomachic, it generally induces anorexia, and a relaxed and macerated state of the skin, some tremulousness, and in many cases slight aphonia. As a febrifuge the full efficacy of quinine is seldom obtained, unless pushed to cinchonism. Cinchonism is therefore the test and criterion in practice of the full and sufficient use of quinine. It is probable that the protective influence of quinine against fever seldom lasts longer than the manifestation of cinchonism. The ordinary headache of fever does not contra-indicate the use of quinine. The power of quinine seems to be to cut off the connexion between local irritation and constitutional excitement, to disturb and break the series of morbid elaborations set up in some specific fevers, which terminate, for the most part, in contamination of the blood and loss of vital cohesion of the capillaries. In intermittent fever it is antidotal. Quinine is of little efficacy in intermittent fever, when exhibited during the paroxysm. Quinine is of no efficacy in the last stage of continued or remittent fever, where the vascular and thermal excitement have been succeeded by organic lesion or contamination of the blood. It should be given, as is well known, in the intermission of intermittent fever, and in the formative, or in the first stage of continued remittent or yellow fever. The use of quinine against relapses of intermittent fever, whether the disease has been primary or secondary, is one of the most valuable applications. *In using* quinine against the paroxysms of intermittent fever, hourly doses of three grains, till twelve doses be given, is the best mode of saturating the system with the remedy. If, however, the disease be a quotidian, with short intermission, six-grain doses hourly, till six doses be given, will be judicious practice.

In the other fevers where quinine is eligible, and the remedy is prescribed during the existence of febrile excitement, the dose, to be efficacious, must be large, and the impression on the disease sudden and overwhelming. An auxiliary, too, is also required in such cases: twenty-four grains of quinine and twenty grains of calomel, in one dose, is the most powerful resolvent of fever. One or two such doses, with an interval of six hours, and followed by a castor oil purgative, are generally sufficient; but I have prescribed six such doses with efficacy, and I recollect no instance of ptyalism occurring when this treatment was required and adopted, and sometimes there is but mild cinchonism. An intolerance of quinine, or early and intense cinchonism, in such cases, is one of the worst prognostics.

In the treatment of simple intermittent fever, or its relapses, calomel is rarely, if ever, prescribed by the writer. Sulphate and carbonate of magnesia mixture, or sulphate of magnesia and tartrate of antimony mixture, as a purgative during the hot stage, (if needed), or fifteen drops of solution of acetate of morphine, with a drachm of sweet spirits of nitre, if there is much suffering from muscular pains, headache, or emesis and retching, will speedily relieve the paroxysm; and followed by quinine, in combination with purgative doses of rhubarb, will fulfil all the indications for the intermission.

But when an European or North American, probably not long from a cold climate, and during the prevalence of malignant disease, is attacked by fever, and shows to the quick and practised eye alarming indications, no fear of the injurious after-effects of the mercurial will have weight to withhold the resolvent dose of calomel and quinine. In cases threatening danger to life only need it be used, and I know of no instance wherein the slightest untoward result has been experienced from its use.

The combination of quinine with tartar-emetic in pneumonic and bronchitic complications of intermittent is eminently successful. The forces which disturb the remedial power of quinine in fever are chiefly inflammatory and congestive complications, or a loaded condition of the alimentary canal. These must be obviated by appropriate treatment, and the disease rendered as simple or idiopathic as possible, concurrent with the use of quinine. Thus arteriotomy may frequently be required in continued, remittent, or yellow fever; and in intermittent, with tenderness over spleen, a blister may be required, as an auxiliary to cinchonism.

There is a form of continued, or irregular remittent fever, occuring chiefly in children or adolescents, in which generally no local cause can be discovered, but which is often imputed to worms; but give what anthelmintics you will, no worms may be passed; hence here they are properly called "stubborn worms." This fever may continue for a week or a fortnight without any contamination of the blood or loss of vital cohesion, and probably depends on intestinal irritation. Danger in these cases chiefly arises from the supervention of some lesion, induced by the long-continued and excessive heat and violent action of the heart, or sympathetic irritation of the brain. In these cases I use quinine, with immediate and signal efficacy, in the following manner:—

The patient is put into a bath, and the cold affusion is applied till the pulse becomes small, and nearly extinct, at the wrist, and the skin cold. He then, while in the bath, gets his dose of quinine (two or three grains), and is returned to bed without being dried. The bath and the dose of quinine are continued hourly as long as the skin persists warm, when the hourly dose of quinine is due. After five or six baths the skin generally becomes permanently cool, and then the quinine is pushed on to cinchonism, alone, and without the bath. This mode of making an intermission in a continued fever I have never found attended with unpleasant and dangerous consequences, and it will generally subdue the fever after every other method has been tried in vain.

In fever of doubtful origin, and where latent inflammation is suspected, I have frequently used a small cantharides blister as a test: in fact, I never like to pass the blistered surface of a patient without inspecting it, its revelations are often so interesting and important. If, instead of the usual vesication of thin serum and cuticle, the vesication is a bladder of fibrinous coagulum, or suety in consistence, inflammatory action is going on, probably in the neighborhood of the part, and tartar-emetic, or such like combinations, are indicated.

Relapses in intermittents have their determinate periods, the day from the last attack being generally some multiple of *seven*. The usual day of relapse among the acclimatized of this colony is the fourteenth or twenty-eighth. After one or two relapses, the law of each individual case can be ascertained by each patient. The prophylactic which I have adopted with great success, and in my own person first, many years ago, is as follows:—Two days before the anticipated relapse, three grains of quinine, to be taken thrice daily for four days; and after a similar relapse interval, the quinine to be again taken in the same manner; and so on, repeated three or four times successively. The disease is eradicated completely by thus baffling the relapse. *Lancet, Sept.* 23, 1848, *p.* 344.

3.—CEREBRAL COMPLICATION IN CONTINUED FEVER.—By G. TODD, Esq., Evenwood.

[Mr. Todd argues that the cerebral complication in continued fever, is not in general of an inflammatory nature, but is the result of influences derived from the action of the fever-poison upon the blood itself, upon the organs which purify the blood, and upon that part of the sympathetic system which presides over the cerebral capillary circulation. Mr. Todd observes:—]

Of all the symptoms which occur in cases of continued fever, and more particularly where the state of the principal organs has been neglected, there are none more formidable, or more to be apprehended, than the cerebral. The brain may become affected in the early stage of fever, and more particularly so in those cases where the exciting cause has been intense, the predisposition strong, and the subsequent reaction excessive. It is more usual, however, to meet with this complication during the middle and advanced stages of the disease. Patients who are about to have this cerebral complication will exhibit two opposite states, which will not fail to warn the observant practitioner of the danger to which the brain is about to be exposed. In the first of these states the patient will be irritable, excitable, without sleep, frequently incoherent, and mutterering to himself; there may be no remarkable heat of the scalp, suffusion of the eye, or headache. In the opposite state the patient is drowsy and sleeps much, so that when he is roused he soon falls asleep again; he looks heavy; the eyes are slightly suffused, and some congestion may be observed about the face and head. Whenever these premonitory indications are observed, the evil ought to be anticipated, by having six or eight leeches applied behind the ears, and the application of them repeated at short intervals; the nape of the neck ought to be blistered; the hair ought to be shaved off the head; and should these remedies fail in giving relief, we have then a powerful aid in the application of a blister to the scalp, and by these means we shall frequently oppose a barrier to the further progress of the disease.

In cases of continued fever, the offspring of a concentrated dose of the fever poison, the patient is often thrown into a state of collapse, frequently so alarming as to excite apprehensions that the patient might die in this state, and for which the immediate use of stimulants is requisite; and as generally the case, the subsequent reaction becomes excessive. There can, then, be no doubt that venesection, in conjunction with other means, will have the effect of greatly lessening the cerebral excitement; but in a great number of such cases the repeated and prolonged abstraction of blood will not mitigate, but increase, the cerebral symptoms: the pulse will still beat forcibly; the action of the heart will not be lessened; the face will continue flushed, the eyes suffused, and the acute pain in the head unmitigated. There will still be intolerance of light and noise; and if the patient has been delirious, such antiphlogistic treatment will only tend to increase it.

The same observations are equally applicable to the cerebral affection, which takes place at the more advanced stage of fever. If we watch the premonitory symptoms which ought to warn us of the approach of this complication, we may then have recourse to bleeding, and other antiphlogistic measures, with the greatest benefit to the patient; for although we must admit that in the production of the cerebral symptoms in continued fever, there is something more than mere congestion or inflammation of the brain, yet we must not infer from this that there is no necessity for taking any steps to obviate or remove congestion of the head in this disease. We must, however, be careful how we proceed with respect to a repetition of the bleeding, and should not go so far as if treating a case of a genuine inflammatory character, always bearing in mind that increased vascular action is no proof in itself of inflammation, but rather may be looked upon as a symptom produced by the fever poison.

It is, then, to the state of the brain at these two periods of continued fever, when the antiphlogistic and derivative plan of treatment has been found inadequate to overcome the urgent cerebral symptoms, that I wish more particularly to draw attention, and to recommend a plan of treatment which, in my practice at least, has been attended by the most gratifying results.

In 1842, while an epidemic of continued fever was prevailing extensively in my locality, I was struck with the very inadequate success which I met with from the antiphlogistic plan of treatment in cases complicated with severe cerebral affection, and more particularly in cases where, from symptoms indicating great cerebral disturbance, I was led to suppose that no other plan of treatment could be attended with beneficial results. It was while attending to a very severe case of this description, and in which the antiphlogistic plan of treatment had been pushed to the utmost extent without relief to the pain in the head, or other symptoms of great excitement, that I ventured upon an opposite plan of treatment, by giving the patient a combination of tartar-emetic, tincture of opium, and camphor mixture; and the benefit from this treatment was indeed most surprising, for the urgent cerebral symptoms vanished as by magic, and the patient was soon convalescent. The same plan of treatment was equally beneficial in many other cases similarly situated. Soon after this I had the pleasure of reading Dr. Graves's book on Clinical Medicine, where I found those views which I had so very imperfectly understood in connexion with this subject fully detailed.

[Mr. Todd introduces some cases from Dr. Graves's work, which are as follows:]

Case 1.—A man, aged twenty-five, was admitted into the Dublin Infirmary on the 20th December, 1834, having then been about eight or nine days ill. He was in a high state of excitement: mental wandering; incessant talking and raving. He had illusions of the senses of sight and hearing; his eye was red and watchful, and he never slept. To this state was added great derangement of the whole nervous system; his respiration was interrupted and suspicious; the pulse was 120, soft, and weak; the pupils were somewhat dilated; tongue parched and brown. Under these circumstances the patient was ordered a draught, composed of two drachms of mint water, two of common water, and a quarter of a grain of tartar-emetic, to be given every hour until it produced some decided effect on the constitution. In the course of four hours he took four doses of the tartar-emetic; almost every dose vomited him, but not immediately. The medicine acted on his bowels, and brought away a considerable quantity of bilious, yellow fluid, after which he enjoyed some sleep; his respiration became more uniform; his raving greatly diminished; the subsultus and tremors were nearly gone, and he appeared quite tranquil. He was now ordered a wineglass-ful of porter, with two drops of black drop, to be repeated every second hour. The next day this man was in a most favorable state. His skin is covered with a profuse warm perspiration; he has slept well; belly soft and natural; respiration slow and regular; pulse diminished in frequency; he is calm, rational, and composed; and from this time he recovered rapidly and completely.

Case 2.—John D——, admitted into the Meith Hospital, May 21st, 1835; three or four days ill; a strong young man; the symptoms were attended with considerable reaction at the beginning, his face being flushed, eyes wild, and head aching; he raved much during the night from the fourth day, and had then a full bounding pulse at 105. He was bled from the arm, and leeches applied to the epigastrium. On the sixth day of fever he was without sleep, had great thirst, skin moist, pulse 120, pain in head severe. His head was shaved, and leeches applied behind the ears, and they were repeated three times. On the ninth day the eyes were suffused, face flushed, no sleep, cold lotions to the head. On the tenth day delirium violent during the night; straight waistcoat necessary; eyes suffused; skin very hot; pulse 120; considerable subsultus.

Six leeches to be applied behind the ear three times successively. Tartar-emetic, four grains; water, one pint; half an ounce every hour. On the eleventh day he slept very little; delirium less violent; heat of skin less. Ordered camphor mixture, eight ounces; tartar-emetic, four grains; tincture of opium, one drachm; half an ounce to be taken every second hour. On the twelfth day he slept five hours; seems better, but still he passes his stools under him; pulse 120; eyes suffused; skin hot; tongue cleaning; belly soft; bowels loose. The same prescription, except that the tincture of opium was increased to one drachm and a half in the eight ounce mixture. On the thirteenth day the medicine was continued for several hours, when he fell asleep, and slept so much and so tranquilly, that it was not thought necessary to repeat it. Pulse 110; subsultus not near so violent; does not rave; knows every one, and answers rationally. About the twenty-first day he was free from fever, but he got no medicine after the night of the twelfth.

Case 3.—I. K——, aged thirty years. This patient's fever commenced with rigor, headache, and pains in the loins, the headache being perfectly severe. He raved incessantly; slept but little; had frequent retching; his bowels were confined: for these symptoms he was purged to excess, and bled largely and frequently, but without any permanent alleviation. On the twenty-first day of fever, the patient exhibited great anxiety; his eyes were blood-shot and wild; tongue brown and furred with clefts, he raved violently, and attempted to get out of bed several times; great excitement and subsultus; his skin was very hot and dry; bowels confined. He was ordered forty drops of tincture of opium, and an enema was exhibited. He slept not during the night, and the excitement continued. To take an ounce of the following mixture every second hour:—Tartar-emetic, four grains; tincture of opium, one drachm; camphor mixture, eight ounces. After he had taken the third dose, he had a large watery evacuation, and after the fourth dose he fell asleep, in which he continued for nearly twelve hours. He awoke much refreshed, and covered with a profuse perspiration. He was able now to recognize his friends; the subsultus and general excitement was greatly, but not entirely allayed; his pulse, which had been 120, small and wiry, had fallen to 98; he continued his medicine during the next night with the greatest benefit. From this period his recovery was rapid and unexpected, and at the end of three weeks he was able to attend to business.

I wish it to be distinctly understood, however, that I am not advocating this plan of treatment as one fitted to the early stage of the disease, before bloodletting and other antiphlogistic measures have been moderately employed; it is only where such treatment has failed to arrest the cerebral affection, that the treatment by tartar-emetic and opium becomes so valuable, and more particularly when, after such antiphlogistic treatment, the patient exhibits symptoms of general vascular excitement, characterized by acute pain in the head, heat of skin, suffusion of the eyes, intolerance of light and sound, delirium, &c.

[The question of the employment of bloodletting in the cerebral complication of fever, Mr. Todd observes, is one of the greatest difficulty. The proper time for bleeding *is at the very onset* of the fever, and before the cerebral affection is fully developed; and, when used in this way, it is often of the greatest utility, and prepares the way for the treatment by tartar-emetic and opium. But the more the sensorial functions are disordered and oppressed, the less likely will bloodletting be to prove effectual. In the following extract, Mr. Todd's views are more clearly developed. He says.]

The cerebral affection in continued fever may be conveniently divided into three stages, each requiring a modification in the administration of the remedies which I am now advocating. In the first stage, the patient will exhibit great vascular excitement, acute pain in the head, with a hot and dry skin; delirium of a violent and roving character: the face will be flushed, the eyes wild; a full, bounding pulse. These symptoms will vary according to the severity of the previous stage of depression or collapse. Under such circumstances, it will be necessary to have recourse to a judicious and moderate abstraction of blood, either generally or locally, and repeated, if the symptoms seem to indicate it. With respect to the quantity of blood which it may be necessary to abstract in this stage of the disease, much must be left to the judgment and experience of the medical attendant, as no general rules can be laid down which will be applicable to every case. The second stage will be characterized by intense headache, suffusion of the eyes, great restlessness, no sleep, violent delirium, quick, feeble pulse, subsultus, and much disturbance of the nervous system generally. It is at this period that the tartar-emetic must be given in large doses, not less than four grains in the eight ounce mixture, either alone or combined with a small quantity of laudanum, not exceeding thirty drops in the eight ounce mixture. In the third and more advanced stage of the fever, the cerebral symptoms will be characterized by delirium, suffusion of the eyes, headache, constant muttering, subsultus, great restlessness, and total loss of sleep; hot skin, quick and feeble pulse. For these symptoms the tartar-emetic must be combined with a larger quantity of laudanum, and the addition of camphor mixture. It is in this advanced stage of the disease that we more particularly experience the beneficial results of this plan of treatment.

When perusing one of my favorite authors (the illustrious Sydenham), I have often been struck with the success which it appears he derived from the administration of opium in various diseases attended with cerebral distress, in malignant fevers, in small-pox, &c. I resolved, therefore, to make a trial of it, in combination with the solution of tartar-emetic, in some cases of continued fever, with severe cerebral complication, which occurred in my practice in 1842, and the results have certainly surpassed my best hopes. When bleeding and other antiphlogistic remedies were found inadequate to subdue the headache, delirium, and other cerebral symptoms, the effects of opium were, in many cases, quite marvellous, all the urgent symptoms vanishing in a very short time; and I am perfectly convinced that the mortality decreased, and the cases of success became more numerous, in proportion as I became more bold in the administration of opium.

" To conclude, I must observe, that I by no means wish to recommend the plan of treatment which I am now advocating as a specific in fever. Its beneficial effects are confined to the cerebral complication, and this complication will, from various causes, present endless varieties. Consequently no general rule can be laid down that will apply to all cases. What may be safe and easy to accomplish on one occasion may be hazardous and difficult on another, and quite impracticable in a third, according to time, degree, and various other circumstances. My present objects are to endeavour to prove that in the production of the cerebral symptoms in continued fever there exists some cause not to be recognized by the production of cerebral lesions, nor the existence of congestion or inflammation, and to confirm the opinions and views entertained by Dr. Graves as to the efficacy of this plan of treatment by tartar-emetic and opium.

Lancet, June 10, 1848, *p.* 629.

4.—SIMPLE CONTINUED FEVER OF CHILDREN.—By Dr. C. West, Senior Physician to the Royal Infirmary for Children.

[The simple continued fever of childhood was for a long time overlooked, and was then described as remittent fever, worm fever, or hectic fever, and was supposed to be dependent upon gastric or intestinal irritation. Dr. West considers that the affection so described is really identical with the continued fever of the adult. He says :]

If we look closely at the characters of this disease, and compare them, as has been done by MM. Rilliet and Barthez, with those presented by the simple continued fever of the adult, we shall, I think, see so close a correspondence between the two affections as to remove all doubt with reference as to their identity. Both diseases occur independently of any unvarying cause, often independently of any cause which we are able to detect ; and both, though generally affecting isolated individuals, yet have also their seasons of epidemic prevalence. Though varying in severity, so that in some cases confinement to bed for a few days is scarcely necessary, while in other cases the patient scarcely escapes with his life, yet medicine has not been able to cut short the course even of their mildest forms. And, lastly, though the local affections associated with both vary much in different cases, yet in every instance we meet with that assemblage of symptoms which make up our idea of fever. Or if, from the examination of the symptoms during life, we pass to the inquiry into the traces left by the disease on the bodies of those to whom it proves fatal, we shall find still further evidence of the close relation that subsists between the fever of the child and that of the adult. Enlargement, tumefaction, and ulceration of Peyer's glands, constitute one of the most frequent morbid appearances in both diseases, and in both, the changes that these glands are found to have undergone are more advanced and more extensive in proportion to their nearness to the ilio-cœcal valve. In both too, the mesenteric glands are enlarged, swollen, of a more or less deep red colour, and manifestly increased in vascularity; while the softened state of the spleen, the gorged condition of the lungs, and the congestion of the membranes of the brain, are appearances common to both diseases. There is, however, no more relation between the severity of the intestinal lesion and the intensity of the symptoms in the fever of the child than in that of the adult; and there is no ground for regarding the disease as the mere effect of the constitution sympathising with a certain local mischief in the former case, which may not be equally alleged with reference to the latter. The symptoms in both "are the expression of the influence of the disease on the whole economy of the disorder which it occasions in the principal functions of the body, and are an essential part of the disease itself, rather than the secondary effects of certain lesions of the bowels.

[The treatment is during the first week of the illness, for the most part, expectant.]

The impaired appetite often renders any other directions about the diet unnecessary, than a caution to the parents or nurse not to coax or tempt the child to take food which it is, and will probably for some days be entirely unable to digest. The heat of skin and the craving thirst are the two most urgent symptoms in the early stages of the affection. The first of these is generally relieved by the tepid bath at 90° or 92° every morning, and by sponging the surface of the body several times a day with lukewarm water. The desire for cold drink is often very urgent, and no beverage is half so grateful as cold water to the child. Of this it would, if permitted, take abundant draughts, but it should be explained to the attendants that the thirst is not more effectually relieved by them than by small quantities of fluid, while pain in the abdomen is very likely to be caused by the over-distension of the stomach. The cup given to the child should therefore only contain a dessert or tablespoonful of water in it, for it irritates the little patient to remove the vessel from its lips unemptied. In the milder forms of the disease, and during the first week, medicine is little needed; but a simple saline may be given, such as the citrate of potass in a mixture to which small doses of vinum ipecacuanhæ may be added, if, as sometimes happens, the cough be troublesome. If the bowels act with due frequency, and the appearance of the evacuations be not extremely unhealthy, it is well to abstain from the employment of any remedy which might act upon them, for fear of occasioning diarrhœa, which is so apt to supervene in the course of this affection.

For the same reason, if an aperient be indicated, drastic purgatives are not to be given, but a moderate dose of castor oil should be administered. Now and then, however, cases are met with in which the bowels remain confined during a great part of the affection, and in which such purgatives as senna are not only borne, but absolutely necessary. They, however, are purely exceptional cases; and it will generally suffice to give a small dose of the mercury and chalk night and morning, and during the day time a small quantity of the tartrate of soda or the sulphate of magnesia, dissolved in some simple saline mixture, every six or eight hours.

The unhealthy state of the evacuations that exists in a large number of cases is generally associated with a disposition to diarrhœa, which becomes a more prominent symptom in the second than it was in the first week of the disorder. Equal parts of the hydrargyrum cum creta and Dover's powder are the best means of relieving both these morbid conditions; the remedy being given either once or twice a day, or more frequently, according to the urgency of the symptoms. The amount of abdominal pain and tenderness must be ascertained every day; and a few leeches must be applied to either iliac region, if the tenderness seem considerable, or if the child appear to suffer much from pain in the abdomen, or if the diarrhœa be severe. If depletion be needed, the application of but a small number of leeches will generally meet the requirements of the case, while copious bleeding is neither useful nor well borne. Even in children of ten years old, I never apply above four or six leeches, and it is very seldom that any occasion arises for repetition of the bleeding. The application of poultices to the abdomen, either of linseed meal or scalded bran, and their frequent repetition, is a very valuable means of relieving the griping pain which often distresses children, and in most cases it is desirable to make trial of them before having recourse to depletion.

There is but one other class of symptoms likely to occur during the first week of the fever, to the management of which I have not yet referred; namely, those signs of cerebral disturbance which are sometimes so serious as to call for treatment. The early occurrence of delirium, though it generally implies that the disease will assume a rather serious character, yet does not of itself indicate the necessity for taking blood from the head; but if the child be quiet and generally rational during the day time, though dull yet not in a state of stupor; while the delirium at night is of a tranquil kind, it will generally suffice to apply cold to the head, and to keep the apartment cool and absolutely quiet. On the other hand, if there be great restlessness and noisy delirium early in the disease, with heat of head or flushing of the face, local depletion is called for; nor is it less useful in those cases which set in with symptoms that bear a close resemblance to those of hydrocephalus, in which vomiting occurs frequently, and the sense of nausea is abiding, while the child either is constantly making a low moan as if in pain, or is extremely restless, and makes loud complaints of head-ache.

In mild cases of the disease, that expectant treatment usually appropriate during its early stages may be continued throughout its course; great caution being exercised as the child begins to improve, to prevent its committing any error in diet. When severe, however, the second week often brings with it a train of symptoms that require many modifications in the plan of treatment. The vital powers need to be supported, and the nervous system requires to be tranquilised; and this is to be attempted by means similar to those which we should employ in the management of fever in the adult. The mere diluents which were given during the previous course of the fever must now be exchanged for beef or veal tea or chicken broth, unless the existence of severe diarrhœa contraindicate their administration. In that case, which, however, does not very often occur, we must substitute arrow root, milk, and isinglass, for animal broths. In a large proportion of cases, nutritious food is all that will be required, but wine is sometimes as essential as in the fevers of the adult; and the indications for giving it are much the same in patients of all ages. Even though wine be not necessary, I generally give some form of stimulant during the second and third weeks of the affection. The prescription which I usually follow is one much praised under such circumstances by Dr. Stieglitz, of St. Petersburgh. For a child of five years old, it is four minims of dilute hydrochloric acid, eight of the compound spirit of sulphuric ether, and three drachms of camphor mixture every six hours. It seldom disorders the bowels if they be not much disturbed at the time of commencing its administration; while a small dose of Dover's powder, as a grain or a grain and a half at bed time, is doubly useful, both in checking tendency to diarrhœa and in procuring sleep for the child, who, without it, would probably be watchful and delirious all night long. So long as any severe abdominal symptoms are present, I abstain from the use of the acid mixture, but give the mercury and chalk, with Dover's powder, every four or six hours, to which I occasionally add an opiate enema at bed time; and support the strength by food and wine as may be necessary.

The only complication that is apt to be troublesome is the bronchitis. Usually, however, the cough to which this gives rise is rather an annoying than a dangerous symptom; and it is in general more harrassing at the commencement of the affection, and again when convalescence is beginning, than during that time when the graver symptoms are present. A little ipecacuanha wine, nitrous ether, and paregoric, will usually relieve it, to which it may occasionally be expedient to add the application of a mustard poultice to the chest.

[In the treatment of the weakness which is left by the disease, Dr. West thinks that tonic medicines are unadvisable; change of air, and especially removal to the sea-side, are not only safer, but are almost always successful.]

Medical Gazette, August 11, 1848, *p.* 221.

5.—ON THE TREATMENT OF MALIGNANT SCARLATINA.—By Dr. J. M. Coley, Physician to the Pimlico Dispensary.

[Since bleeding was abandoned in the treatment of this disease, stimulants have formed the usual remedies. They were employed by Dr. Coley, in connexion with proper local applications, at the commencement of the epidemic in Dec., 1847; but finding that he lost the first four patients in succession, and observing that the state of the fauces was identical with that which was found in the late epidemical diphtherite, he was induced to try the effects of small repeated doses of calomel, at the very commencement of the disease. Dr. C. says,]

The trials which I have given to this plan of treatment have satisfied my expectations, as far as the disease in the throat is concerned, the operation of this remedy having produced the same salutary effect upon the capillary circulation in the inflamed parts as I found it to effect in cases of diptherite. It must, however, be observed, that the medicine must be exhibited very early in the disease, before ulceration commences, for it exercises no beneficial effect in assisting the ulcerative process when that has become established: this I discovered in the treatment of diphtherite and other inflammatory affections of the throat, before any considerable ulceration has commenced. With respect to its operation in preventing the supervention of the specific inflammation of the abdominal viscera, I have not had sufficient experience at present for forming a correct opinion, in consequence of our ignorance of the exact period at which it may commence. As far as I have had opportunities of pursuing this inquiry. I am inclined to believe that the congestions and inflammatory proceedings in the internal organs are nearly, if not exactly cotemporaneous with those which we observe on the fauces. If this should be found to be the case, I should be inclined to expect the same salutary effect from calomel as I have observed in sub-acute and acute inflammations in other internal organs, as well as those engaged in scarlatina, when administered *before the morbid product has been elaborated.* After that event has occurred, as in granular degeneration of the kidney or in tubercle, I am aware that mercury has a decidedly injurious effect on the constitution, without producing any improvement on the specific deposition, which it seems on the contrary to accelerate.

[It should be given in doses of one or two grains every four hours; and thus given does not affect the mouth. Acetate of ammonia may be given in conjunction with it; or in the latter stages, if there are hæmorrhages from the mucous membrane, or petechial spots, quina with sulphuric acid may be exhibited. The best local application is a lotion with nitrate of silver, a scruple to the ounce, applied twice or thrice a day to all the parts which are ulcerated, or covered with diphtherite. If abscesses form in the glands of the neck, they are to be opened freely as soon as there is fluctuation or external redness.] *Med. Gaz., April* 21, 1848, *p.* 666.

—ON SOME POINTS IN THE TREATMENT OF SCARLATINA.—By Dr. C. West.

The state of the throat must be carefully watched in every case of scarlet fever: and when there is much swelling of the tonsils, if the child be too young to gargle, a slightly acidulated lotion should be injected into the back of the throat, by means of a syringe, every few hours, in order to free it from the mucus which is so apt to collect there, and to be the source of much discomfort. If there be much deposit of lymph upon the tonsils, it is generally desirable to apply the strong hydrochloric acid, mixed with honey, in the proportion of about one part of the former to six of the latter, by means of a dossil of lint, or a camel's-hair pencil, two or three times in the twenty-four hours: but the strength of the application must be increased if the tonsils be ulcerated, or if any disposition to sloughing should appear. The coryza, which is so distressing and so ill-omened a symptom in cases of severe scarlatina, is best treated by throwing a small quantity of a solution of gr. j. or gr. ij. of nitrate of silver in ℥j. of distilled water, up the nostrils every four or six hours. The glandular swellings and at the mucous membrane of the alimentary canal, the less likely are the other important parts to suffer—the less chance have you of pleurisy, pneumonia, pericarditis, &c.

Treatment.—I think the most instructive way in which we can discuss the treatment of this disease, will be for me to enumerate the various methods which have been proposed for this purpose, and to point out the reason for rejecting some and adopting others. As many as seven different plans may be specified, of which I shall place last that which I am in the habit of following here, and which I call *the treatment by elimination.*

The first plan is that by venesection. It was thought by many, and still, unfortunately, is thought by some, that when called to a case of rheumatic fever, they have only to open a vein, and, if they succeed in taking away a sufficient quantity of blood, which, in many instances, they think should be little short of two or three pints, that they may by this large and rapid abstraction of blood cut short the disease, and convert a malady which ordinarily lasts some weeks, into one of a few days' duration. Frequently not content with one large bleeding, they will pursue the practice, and bleed a second, a third, or a fourth time, at short intervals, and in large quantities.

[Dr. Todd earnestly dissuades us from the adoption of this practice, which he says has the support neither of reason nor of experience; though some patients may be relieved by it, others will be killed, and others will tediously linger on in an anæmic and debilitated state. The second plan of treatment, that by moderate venesection and diaphoretics—and the third, that of the administration of calomel and opium until salivation is produced, are also objected to by Dr. Todd, it being considered by him that both are productive of certain evil consequences. Dr. T. then tells us—]

4. Another plan of cure which has been proposed is by colchicum and by guaiacum. These drugs, but especially colchicum, have long been considered to possess a specific influence over rheumatic and gouty affections: and it has been laid down that the rheumatic condition will be subdued in just such proportion as you get your patient under the influence of the colchicum, somewhat in the same way as quinine exercises a specific influence on ague. Now I think it requires only two or three cases to a candid mind to prove the fallacy of this doctrine; I myself have frequently given this remedy the fairest trials, but I could never discover any effect rom it sufficient to entitle it to the character of a specific. That it is capable of exerting a remarkable influence on gout I do not deny; but even this must be admitted with considerable limitation, and it is certainly far from exercising any similar or analogous influence in rheumatism, whether acute or chronic. The effect of guaiacum has also been supposed to be specific, and similar to that of colchicum; but I am equally indisposed to give it that character. Both these medicines, when given in large doses, purge, and if given in such doses I have no doubt they may do some good, on the principle of eliminating the morbid material by the alimentary canal; but unless you give them in such doses as to produce colliquative purging, you do but little towards cutting short the disease; and if you do give them in these large doses, you produce a degree of prostration and debility which is sometimes more dangerous than the disease, and you leave your patient to linger through a tedious convalescence. Colchicum given in small doses produces no good effect in rheumatic fever according to my experience; on the contrary, I fear that in some cases it has a prejudicial influence on the nervous system, making it more irritable and susceptible of impressions, and rendering the patient more obnoxious to the various accidents that are liable to occur in the course of the disease.

5. *Treatment by Opium.*—This plan of treatment has been lately revived by a very able physician, Dr. Corrigan, of Dublin. It has much to recommend it, and, on the whole, you will find it extremely serviceable in practice; but I do not recommend it alone: its great value consists in relieving

suffering, and soothing the nervous system, while it promotes diaphoresis. The opium is given in large and frequently-repeated doses, care being taken not to produce too much narcotism; but upon this point in general, there is not much need for fear, as there seems to be in the generality of patients a remarkable tolerance of opium.

[After alluding to Dr. Haygarth's treatment by large doses of bark (for which quinine is now substituted), which he considers applicable in certain instances, and still more in certain stages of the disease, Dr. Todd proceeds to speak of the *treatment by elimination* which he adopts. He says—]

It is probable that the *materies morbi* in rheumatic fever is lactic acid. We know that the natural emunctory of this is the skin: many chemists maintain that it will also escape by the kidneys, and if it ever does so, perhaps this is more likely during rheumatic fever than at any other time; and again, since vitiated digestion is apt to produce it in undue quantity, and it, therefore, exists abundantly in the stomach, there is every reason to think a certain proportion of it may be carried off through the alimentary canal. The indications are, therefore, to promote the action of the skin, the kidneys, and the bowels; to use antacid remedies; and to give large quantities of fluid for the free dilution of the materies morbi, and in aid of the drainage by diaphoresis and diuresis.

The best way to promote the action of the skin is by opium, especially if you combine with it nitre and ipecacuanha. For this purpose I use a compound, which resembles the original Dover's powder, which contains nitrate of potass instead of sulphate of potass, as prescribed in the Pharmacopœial compound ipecacuan powder. Our usual prescription is one grain of opium, one grain of ipecacuanha, and five grains of nitre: this must be given every two, three, or four hours, according to the urgency of the symptoms and the need the patient has for opium. This drug quiets the nervous system, and procures sleep, and with the ipecacuan promotes sweating; while the nitre acts upon the kidneys, and the ipecacuan may exercise some influence on the liver.

Next you must give purgatives to such an extent as to keep the bowels in a loose state, but not carrying the purgatives so far as to weaken your patient, or worry him by obliging him to be frequently moved in or from bed. You will find it advantageous to use an alkaline purgative; and there cannot be a better medicine for this purpose than our hospital nostrum—the white mixture containing magnesia and sulphate of magnesia. Sometimes you may give the potassio-tartrate of antimony with advantage, but as it is a depressing remedy, it is not always advisable to use it.

But, while we are thus alkalizing our patient, and giving internally sudorifics and diaphoretics, is it advisable to attend to the state of the joints? The diligent physician will tell you by all means to attack them at once:—but there is such a thing as "nimium diligentiæ" in physic as well as in any other matters. Many will say, the best thing you can do is to leech a painful and swollen joint. I formerly tried it extensively, but for some time past I have not done so, as I generally found it either a useless or an injurious practice. You may apply leeches, and in a short time after you will find the pain and swelling removed, and you may be disposed to say to yourself, "here is a proof of their efficacy:" but wait twenty-four hours, and then you will generally find the pain and swelling as bad as ever, and the joint in just the same condition as before. Now apply leeches, and you will probably fail to give any relief. You have by the first application relieved the pain for a time, but you have produced no permanent good—you have rendered the disease more erratic, and less amenable to subsequent treatment. Frequently when you leech a joint, the pain and swelling subside, but its fellow becomes swollen: leech it, and the swelling and pain return to the original joint. Nothing is more important to avoid, or more troublesome if not prevented, than the erratic tendency of the rheu-

. It will fly from joint to joint, and in pursuing it with leeches you only drive it out of one joint into another. I am satisfied that leeching the joints favours this erratic tendency.

I am not prepared, however, to advise you to neglect the local treatment of the joints. When they are much swollen and painful, you may give great ease to your patient by enveloping them in a large quantity of the soft carded cotton—what is commonly called *cotton-wool*. Over this you must wrap a sheet of oiled silk, so as to cover in the wool completely, taking care to have no part of it exposed. By this air-tight covering, you keep the joints in a complete vapour-bath; and when you come to remove the oiled silk and wool after twelve or twenty-four hours, you find the wool completely saturated with moisture, which generally is strongly acid.

You perceive that all the means employed in this mode of treatment tend to elimination, and to the relief of pain—the opiate sudorific—the nitre acting on the kidneys—the purgatives on the mucous membrane of the bowels—the wool on the joints.

During this treatment, while you allow your patient the liberal use of simple diluents, you must give a fair amount of nourishment from the first; and I think this may be best supplied by a small quantity of good beef tea, given frequently throughout the day. *Med. Gaz.*, *Oct.* 6, 1848. p. 568.

[But this treatment cannot always be fully carried out. For instance, as Dr. Todd says,]

It may sometimes happen that you will have to deal with a patient who is unable to take opium. What are you to do under these circumstances? There is no reason why you should change the general plan of treatment—you may still give sudorifics—and if your patient will bear sedatives, you can give hyoscyamus, or hop, or extract of lettuce. But it will, I believe, very seldom happen, that in this severe and painful malady, patients will be unable to bear opium in some shape or other, and the benefits to be derived from the proper use of this drug are so great that you ought to try it in various ways, and in different preparations, before you abandon it altogether. I think that practitioners often fail in obtaining all the good effects of opium from being too timid in the use of it, giving it in too small a dose, and employing it in a vacillating manner: you must give it in a large dose, not less than a grain, frequently repeated, taking the state of the pupils as your guide to encourage or deter you from proceeding with it. You will of course proceed with great caution if you find a very contracted pupil in addition to some degree of narcotism.

[Too much sweating, and too much purging are also to be avoided, as well as too much opium. If the swollen and painful state of the joints does not yield to the cotton-wool application, Dr. Todd advises the prompt use of *small* blisters. He says,—]

I order a small mustard cataplasm to be applied to the affected joint, and to be kept on for half an hour to redden the skin: after removal of this, the skin must be carefully washed and dried, and the blister may then be applied; you must not let the size of this exceed that of a crown-piece. It is better to apply two or three small blisters in rapid succession, and to different parts of the joint, than one large blister. After the blister has risen well, if the swelling of the joint subsides quickly, as it very frequently does, you may let the blister heal as fast as it will; but if the swelling has not subsided, then you had better cut away the cuticle completely, and promote a free discharge from the blistered surface by dressing it with stimulating ointments.

[The heart must be closely watched from the very commencement of the attack. Dr. Todd advises free vesication rather than bleeding, in the pericardial and endocardial complications of rheumatism. He observes,—]

On the first indication or suspicion of heart affection, a large sinapism made with flour of mustard and hot water, is applied over and beyond the region of the heart. This is to be kept on as long as possible: after its removal, and after the skin has been properly cleansed, put on a blister of good size, and you must be guided as to the dimensions of it by your opinion of the extent of the heart which is affected. You need not be afraid of large blisters here, as in the treatment of the joints, because the inflamed organ is much more distant from the surface than the synovial or other articular tissues.

If you pursue the plan which I have thus pointed out, and have drawn a large quantity of blood to the surface by the long continued stimulation of mustard, you will generally succeed in producing very free and large vesication, from which you may obtain a considerable quantity of serum, or rather, I should say, of *liquor sanguinis*, for the fluid of the blister is serum containing more or less fibrine. If you examine the fluid from blisters, especially when the skin had been previously irritated by mustard, you will almost invariably find that it contains more or less of fibrine. In very many instances, if not in all, the coagulated fibrine disposes itself as a membranous layer in immediate juxta-position with the deep surface of the elevated cuticle. On removing the cuticle slowly and cautiously, the serum will not flow away: it is still retained by a very complete, but soft, moist, and almost spongy membrane. This is coagulated fibrine, which has entangled in it a large quantity of the white corpuscles. How these latter escape from the blood-vessels, or whether they are not the result of the organizing tendency of the liquor sanguinis, I cannot pretend to decide. It is clear, however, that blisters will take away the liquor sanguinis with its dissolved elements and perhaps the white corpuscles, which constitute more than four-fifths of the blood. By blistering, you take away that part of the blood which is the great agent in the development of new formations, and these are what you have to guard against in the cardiac inflammations. Moreover, by blistering, you spare that most important part of the blood, the colouring matter, which seems especially valuable for preserving the nervous functions in a state of integrity, and which is no less important for maintaining the healthy action of the heart.

But some of you will say, "What! do you advise us to lay aside that which has so long been regarded as the sheet-anchor in the treatment of inflammations—namely, bleeding, and not only general bleeding, but topical bleeding likewise? If we are neither to cup nor to leech in pericarditis or endocarditis, what security, then, shall we have against the progress of inflammation—against the formation of excrescences on the valves—against ulcerative or suppurative processes being established in the heart, destroying its valves, and infecting the blood?" I am quite aware that the doctrine which I recommend for your adoption is likely to be regarded as extremely heterodox by many, but I believe the number of those who would think so is daily diminishing. In the treatment of the cardiac affections which accompany rheumatic fever, you have two objects to keep in view: the first is to check the morbid process completely, or to restrain it from producing such changes as may prove destructive to the tissues, and consequently to the mechanism of the heart; and, secondly, to obviate liquid effusions which may distend the pericardium, compress the heart, and so embarrass its actions, as well as the respiratory movements, as to prove seriously detrimental to life. Now, with regard to the first point, there can be little doubt that bleeding will not stop or prevent the formation of those fibrinous concretions which are so apt to form upon the valves. The formation of these concretions is in a great measure mechanical, and in certain states of the blood they would form around or upon any opposing material just as fibrine will coagulate round the bunch of twigs by which blood is beaten as it flows from a vein. In this rheumatic state, the contractile tendency of fibrine is apparently increased, as is shown by the uniform formation of a tough buffy coat in the blood removed from rheumatic subjects; there is also a considerable increase in the number of white corpuscles; the buffy coat is formed of these two constituents, and the constancy of its formation denotes a tendency in these two elements to separate from the other elements of the blood in the rheumatic state. Doubtless, a disturbed state of the nutrition of the serous membrane or the endocardium, or of certain parts of them, precedes the formation of fibrinous deposits upon them; and this disturbance of nutrition is caused by the accumulation of the rheumatic matter in the vessels of the part. The effect of this is analogous to, if not identical with, that produced by a blister on the vessels of the skin, which I have just now described to you. The liquor sanguinis, and probably the white corpuscles, transude through the parietes of the blood-vessels, and the plastic matter coagulates upon the surface of the endocardial and the pericardial membrane, forming there a substance identical, or nearly so, with the buffy coat of the blood. In the endocardium, which is in contact with the blood as it flows through the heart, this layer of plastic matter forms a nucleus, around which fibrin from the blood which flows over it may coagulate.

Now, if this be a correct account of the manner in which these plastic concretions develope themselves in pericarditis and endocarditis,—and I believe it is that which is most consistent with our present improved knowledge of the blood and of inflammation—it is evident that the object of the practitioner should be to prevent the development of that altered state of nutrition which precedes the fibrinous formations, or to cut it short after its formation. Then comes the question, will bleeding do this? I think our experience of the effects of bleeding upon the joints ought to convince us that it will not: for bleeding certainly will not remove the rheumatic state from them; for, however it may relieve for a short time by diminishing hyperæmia, the flow of blood speedily returns with greater activity than before. I apprehend that the state of the joints and that of the heart are as nearly as possible the same, the difference being that the nature of the synovial secretion offers a complete physical impediment to the formation of fibrinous or plastic concretions in the joints.

And I would put another question—will bleeding cut short that state of blood which is so favorable to the formation of the plastic deposits? To this I answer likewise in the negative. Among the best of the recent re-researches upon the relative quantities of the elements of the blood in various conditions of that fluid, are those of Becquerel and Rodier: what do these observers say as to the influence of bleeding upon the blood? Why, that it greatly diminishes the red particles, that it greatly augments the proportion of water; and that it affects but little or not at all the fibrine: thus, in short, you get a thinner liquor sanguinis holding in solution the same or nearly the same amount of fibrine. In other words, you get a state of liquor sanguinis very favorable to transudation, and therefore very favorable to plastic formations.

If, then, bleeding will not stop the inflammatory state which creates the undue determination of the blood to the pericardial and endocardial surfaces, and if it will not prevent the plastic formations, but rather favor them, surely it is not the remedy for pericarditis and endocarditis. And if the effects of venesection be, as beyond all doubt they are, to diminish all the solids of the blood but the fibrine, and to augment the water, surely the employment of this treatment to a great extent is fraught with the greatest danger of creating liquid effusions into the serous and synovial sacs, which are so exposed to the action of the rheumatic matter. These are, as concisely as I can put them before you, the theoretical grounds upon which I object to the practice of bleeding, whether local or general, for the cardiac affections of rheumatic fever.

[Besides the local treatment by blistering, mercury, which Dr. Todd believes to have a power of breaking down plastic formations, should be given. For this purpose calomel and opium is the best prescription; and if ptyalism is to be rapidly induced, mercurial ointment may be rubbed into the groins and axilla, and used to dress the blistered surface. There is a complication of rheumatism with delirium, much resembling in some of its features, delirium tremens, and, like it, not at all resulting from inflammation of the brain or its membranes. The following are Dr. Todd's observations upon this affection :—]

When we consider the circumstances in which the brain is placed in these cases, we cannot wonder at its functions being disturbed. In the first place the organ is supplied by a depraved blood—a blood deficient in its most important staminal principle, its coloring matter: a blood infected with an abnormal material, the rheumatic virus, whatever that may be; and if the patient, as is very often the case, have been treated by sanguineous depletions, a watery blood. Such a blood is ill suited for the proper stimulation of the heart, and, consequently, it is not propelled by that organ with its proper force, although the rapidity of the heart's action may be much increased. And if the heart be inflamed, there can be no doubt that the effect of that inflammation will be to weaken its power. Hence, in cases of this kind, the brain is feebly furnished with a blood, poor in coloring matter, and abounding in water.

I have met with a few cases in which the patient, having evinced previously little or no delirium, has become rapidly comatose, with dilated pupils, and sunk quickly. And it sometimes happens that patients who have been actively delirious will suddenly fall into coma and die; and sometimes they die suddenly while making some effort, beyond their strength, in the midst of their delirious ravings. The state of the kidneys may have some influence in determining the mode of death in those patients who pass quickly into coma, as we know that defective action of that organ so often exercises a baneful influence on the brain.

You will find a valuable collection of cases of delirium and other disturbances of the nervous system, in connection with rheumatic cardiac affections, in Dr. George Burrows' interesting and most valuable work on disorders of the cerebral circulation. The evidence which Dr. Burrows has adduced in that work should teach us, that whenever we meet with a case of delirium, especially rheumatic delirium, we should diligently explore the region of the heart, and watch the condition of that organ most carefully from day to day.

The development of this delirium should be the signal to the practitioner to exercise the greatest vigilence in looking out for cardiac or other internal inflammations, as pneumonia or pleurisy, or even peritonitis, which sometimes, although rarely, occurs in rheumatic fever: if such have not been previously detected. But it should likewise be looked upon as a signal of distress, denoting that the powers of the constitution are unequal to the severe trial through which the patient is passing; and he should immediately come to the patient's aid, and make instant arrangements for having him constantly watched by competent nurses or other attendants, taking care that the patient shall never be left alone. If he has been sweating freely, that must be checked; the amount of bed clothes may be reduced: if his joints have been enveloped with wool, it must be removed. In like manner any other too free evacuation must be stopped, as purging, or the too copious discharge from a blister. Nourishment must be given very frequently, but in small quantities, so as not to embarrass the stomach; and this should consist of beef-tea, arrow-root, milk; and frequently it will be necessary to conjoin with this wine or brandy, or porter when that has been an habitual beverage. If the patient be wakeful, sleep must be procured by the free administration of opium. These are the points to which you will have to direct your most watchful care; provide against your patient being allowed to exert himself beyond his strength; remember that it is in this state that patients often die suddenly by syncope, and remember to nourish and support them well. Eschew all local treatment to the head; even the application of ice is calculated to do mischief, by depressing the heart's action.

When, however, the patient evinces a tendency to coma, then of course you will not use opium; then I would advise you to shave the head, and to counter-irritate it and the back of the neck, by sinapisms first, and afterwards, if you find it necessary, by blisters, pursuing at the same time those measures for the support of the patient which I have already pointed out, and which you may be assured are not less necessary in the comatose cases than in those in which active delirium prevails.

I have already told you that you must be careful in carrying out this general plan of elimination with the closest attention and regard to the powers of your patient's constitution. I allude to this subject again, for the purpose of mentioning to you a sign which has over and over again proved most valuable to me, in leading me to pursue an altered course of treatment. When the patient has begun to pass pale urine, in good quantity, either without precipitate, or with a greater or less quantity of pale lithates, you will almost invariably find that he will be the better for a more generous treatment, even although the articular affection still continue troublesome. You may give him ammonia, or quinine and sulphuric acid, and in many instances you may give wine; and I have been astonished at the rapidity of the progress of cases under this altered treatment; cases which had been stationary for two or three days, have, under the circumstances and treatment I have described, become convalescent in little more than forty-eight hours. *Med. Gaz., Oct. 20, 1848, p. 655.*

8.—ON THE NATURE AND TREATMENT OF GOUT.—By ANTHONY WHITE, Esq., late President of the College of Surgeons, &c.

[Mr. White states that he has had ample opportunities for the study of gout, having inherited a gouty diathesis, and having been for forty years the subject of frequent visitations of the disease. Before giving his own views, he quotes the propositions laid down by Dr. Holland, which he thinks well define the actual state of our knowledge as to the intimate nature of gout. They are the following :]

1. "That there is some part of bodily organisation disposing to gout, because it is an hereditary disease.

2. "That there is a *materies morbi*, whatever its nature, capable of accumulation in the system, of change of place within the body, and of removal from it.

3. "That though identity be not hitherto proved, there is a presumable relation between the lithic acid or its compounds, and the matter of gout; and a connection through this with other forms of the calculous diathesis.

4. "That the accumulation of this matter of the disease may be presumed to be in the blood; and its retrocession or change of place, when occurring, to be effected through the same medium.

5. "That an attack of gout, so called, consists in, or tends to produce, the removal of this matter from the circulation, either by deposition in the parts affected, by the excretions, or in some other less obvious way, through the train of actions forming the paroxysm of the disorder.

6. "That there is an intimate relation between the condition of gouty habit and the functions of the kidneys and liver, both in health and disease.

7. "And that the same state of habit or predisposition which in some persons produces the outward attack of gout, does in others, and particularly in females, testify itself solely by disorder of internal parts, and especially of the digestive organs."

[As to hereditary predisposition, Mr. White thinks that it is probable that the real evil transmitted by the gouty to their offspring is an unwholesome blood-making apparatus, tending to the generation of morbid matter. He says :]

On the whole, then, we may safely admit that hereditary gout is a disposition to generate a certain morbid matter within the body, whether that disposition be the effect of some abnormal organic condition, promoting its formation or impeding its due excretion, or of some transmitted impurity of blood, which tends, as usual in such cases, to reproduce and continue itself by vitiating the nutritive functions. The same disposition, but created by other causes, must obviously exist in those cases in which gout occurs as an idiopathic disease. Its individual or ancestral origin is a circumstance which may influence the intensity of its development and its pertinacity in the system, but in no way affects its intrinsic nature. Whether hereditary or not, it presents the same general characteristics, and is of course attributable to the same material agent.

Setting out, then, from this cardinal principle of a *materies morbi* circulating with the blood, we have next to investigate its nature and its origin. And here we are struck on the very threshold of the inquiry, by the close affinity between the gouty and the lithic acid diathesis—an affinity so remarkable that a very general disposition prevails among medical writers to consider lithic acid as the true gouty poison, and to impute its presence in the system to the impaired action of the kidneys. As to this latter notion, the arguments adduced in support of it appear to me to be based on a singular misapprehension of patent facts. The discharge of lithic acid and its salts in the urine is a salutary process; and while the kidneys are actively performing such a process, it is strange, indeed, to charge them with creating the offensive matter they only serve to remove. It is not from the presence of lithic acid sediments in the urine of the gouty, but from their absence, that we should be warranted in ascribing to defective action of the kidneys the accumulation of that excrementitious matter in the system.

If the blood was manifestly surcharged with lithic salts or their equivalents, while none such escaped in the urine, then, indeed, we should have reached the end of our inquiry in full assurance that the kidneys were the very matrices of gout. But it is not so in reality; and the most we can venture to assert is, that the renal functions, in common with others, are secondarily affected by the cause, whatever it be, of the gouty diathesis. I think it the more necessary to insist on this point, as it is one on which so acute and lucid a reasoner as Dr. Holland appears to have fallen into error. "The kidneys," he says, "are evidently the organs of the body upon the disordered or deficient action of which depend those changes in the circulating fluids which have the closest relation to all the phenomena of gout." He would, I think, have been nearer the truth, if he had said that the kidneys are, of all organs, those whose secretions afford the most faithful and the most readily discernible evidence of the changes aforesaid.

[That the gouty and lithic acid diathesis are not identical, is shown, Mr. White thinks, by the fact that the gouty paroxysm may occur without any excess of lithic acid in the urine; and, on the other hand, the urine may be loaded for a long period with lithic acid deposits, while the patient has not a single symptom of gout. He says,]

The gouty poison, then, is not identical with lithic acid, but is so near akin to it that the chemical and pathological characteristics of the latter may probably yet serve as indices to guide us to the discovery of the former.

"Organic chemistry," says Dr. Holland, "has taught us how readily the elements out of which all animal matter is formed are displaced from one combination and enter into others; and how very slight, frequently, are the differences, indicated by analysis, between substances eminently noxious to the system, and those indifferent or beneficial to it. We owe, further, to recent experiments the explicit proof of what simple observation had partly shewn before—the remarkable effect upon the whole mass of the blood of minute quantities of certain matters brought into the circulation—leading to the inference of analogous effects from an increased proportion of one or other of its principles accumulating or being unduly retained in the body. * * * These circumstances, now familiar to us, do certainly not identify the material cause of gout with any of the animal excretions just named [lithic acid, urea, the lithic or purpuric salts, &c.]; but they tend to concentrate our views towards them, and give a much more specific direction to future research. The assured connection of the gouty with the calculous diathesis—the chemical nature of the concretions and deposits in the former—and the evidence that these deposits often become in part a substitute for the more active forms of the disease: all concur in further sanctioning the same general view. If we cannot affirm that urea, the lithic acid, or other animal compounds circulating in the blood, give cause to the phenomena of gout, under the most cautious reasoning we are at least entitled to assume, with some confidence, that these matters secreted from the kidneys *are the equivalents to gouty matter present in the system*—that they have certain proportion of quantity to each other—and that upon their balance depend all the essential characters of the disease—its modifications being determined by various causes; some of them topical, some belonging to general functions implicated in the effects of this common cause."

I particularly invite the reader's attention to the words above printed in italics. They imply that the morbid development of lithic acid and its salts may be due to the presence of some principle, altogether unlike them in sensible properties and chemical composition.

[Mr. White ascertained the true nature, as he believes, of the disease, by submitting to the old plan, as he says, of "patience and flannel," and observing what nature would do. He found, on several of these occasions, that he was attacked with vomiting and acrid bilious discharges from the bowels; and that immediate relief followed, proportioned in degree to the copiousness of the bilious evacuations. If the diarrhœa was too scanty, he took five grains of calomel; this produced the bilious discharge, and he was well again. To use his own words,]

The conclusion forced upon my mind by these facts, recurring again and again during a period of so many years, is, that not to the stomach, or the kidneys, or to the impaired functious of any other viscus than the liver, is the cause of gout ascribable.

[In corroboration of this view, Mr. White remarks, that all the esteemed specifics against gout have the common property of stimulating strongly the hepatic functions. This was the case with the *eau medicinale*, formerly so popular, and is a characteristic of the colchicum which was probably the active agent of that nostrum. Speaking more directly of the treatment of gout, Mr. White says,]

Latterly, it has been my practice to use colchicum in combination with other medicines: when I was in the habit of taking it singly, my dose was generally about sixty drops of the wine of the seeds, repeated every six hours. After three or four of such doses the bowels were acted on; the evacuations had the odour of the colchicum; deeply tinted, scalding bile was passed, and I was well, for I needed no more. Now, if a spontaneous evacuation of bile operates critically to the relief of the gouty paroxysm; if five grains of calomel produce relief; if just so much colchicum or other medicine produces relief as is sufficient to cause a copious discharge of bile, then it is demonstrated that the diminished or altered state of the hepatic secretion, which is always a concomitant of gout, is not to be classed among the secondary phenomena of that disease, as pathologists have hitherto invariably supposed.

Acidity in the stomach is an unfailing element in the gouty diathesis. Now such a condition of that organ may, undoubtedly, react on the liver, and impede or vitiate its secretions. On the other hand, we know that a very important office performed by bile is the neutralization of the free acid, which is always developed in the stomach during healthy digestion, and is, therefore, a constant ingredient in chyme; only assuming a morbid character when it is excessive or otherwise abnormal.

The main object to be pursued towards the effectual cure of the gouty *paroxysm*, by the removal of its immediate cause, is the restoration of the natural functions of the liver, as indicated by a copious discharge of bile through the bowels. This object may be attained, more or less promptly, and sufficiently, by the administration either of calomel or colchicum, or of some other potent deobstruent of the hepatic system. But here, as in other instances familiar to the minds of my readers, the principle of combining analogous remedies will be found strikingly advantageous. My own practice has long been to rely exclusively for the cure of the gout on the following prescription: ℞. Hydr. chlorid., ext. colchici acet., ext. aloes purificati aa. gr. j.; pulv. ipecac. gr. ii. M. et fiat pilula quartis horis sumenda.

Two or three of such pills are generally enough to produce a considerable disgorgement of the liver, which I then assist with one or two doses of the compound decoction of aloes. By this time the gouty paroxysm has either ceased, or there is a marked subsidence of all its distressing symptoms. The pills may then be administered at longer intervals, varying from eight to twenty-four hours, according to circumstances. The treatment I have above described possesses the cardinal and paramount requisite of being effectual to the end proposed. In addition to this it is important to know that the combination of calomel and aloes with colchicum, while quickening and corroborating the specific action of the latter on the liver, seems also to neutralise all the noxious properties of that hitherto formidable medicine.

Medical Gazette, August 18, 1848, *p.* 279.

9.—ON GOUT.—By Dr. Robert Dick.

[Dr. Dick believes that the stomach derangement which usually accompanies an attack of gout, is not the cause of the said attack, but only a coëtaneous effect with gout of a diseased condition of the blood. The following are his views of the pathology and treatment of gout:]

The history of a simple case of acquired acute gout seems to consist in a plethoric state of the circulation, usually owing to food too rich, plentiful, and stimulant, and to deficient exercise; to the blood being, moreover, unduly charged with fibrine and red globules; to a thence-resulting partial decomposition of that fluid, or at least a disturbance of the physiological equilibrium of its normal constituents. Hence a tendency to, and a necessity for, a more than usual elimination by the kidney of uric acid and the urate of soda. These, however, so superabound, that the kidney cannot excrete them sufficiently largely or quickly, or becomes fatigued in so doing, as every organ is apt to become whose function is too continuously called into exercise. In consequence, uric acid and the urate of soda, not finding a physiological outlet by the kidney, are ready, as the event shows, to be deposited where a local inflammation affords an opportunity, that local inflammation being itself but an effect of constitutional disturbance, caused by the superabundance of uric acid and urate of soda in its circulation.

What circumstances determine the preference of gouty inflammation for the extremities are not altogether clear. It may be, that in these parts the circulation being more feeble, and the animal temperature lower than elsewhere, the deposition of urate of soda is facilitated. Under this supposition it will be the deposited urate of soda that causes the local inflammation, not the inflammation that leads to the deposition of the urate of soda. Which of the two phenomena is the primary and causual one, it is not easy to determine. It may be, that now the one and now the other is so. It is uncertain, also, whether in all cases urate of soda is actually deposited about the affected joints, or remains in a state of solution. That it is sometimes deposited is certain; but in the early gouty paroxysm, and before the disease is chronic, it is re-absorbed. In chronic cases, however, this result does not follow; it remains where it has been deposited, forming what are called chalkstones, and permanently injuring the play of the articular tendons and ligaments, and, consequently, the movement of the joint. But though the enlargement and stiffening of the joints is in part owing to the deposition of the urate of soda, it is also, in part, due to exudation of the plasma or coagulable lymph, by which cellular tissue is solidified, tendons are thickened, &c.

In many cases, the arthritic is associated with a neuralgic diathesis, and I have often observed that in such instances moral irritation of a depressing kind will strongly predispose to an attack. In those also who are highly charged—if the phrase may be used—with a gouty disposition, a thousand trivial circumstances will develope it, in like manner as we observe in some people erysipelatous inflammation follow any slight abrasion, &c., of the skin. I have seen the slight pressure of a new boot, a long walk, in which the articulations and muscles of the foot are too much exercised, and even causes less important, induce attacks of gout. With its speedy occurrence after an incautions use of particular wines or articles of food, every practitioner is familiar. Champagne and claret soonest induce it in many cases. Of all vegetable acids. the malic is the one which, according to my observation, is most objectionable in the case of gouty subjects. I believe that in these cases, acids act detrimentally, by hindering the due elimination of uric acid and its salts by the kidney.

Gout presents several varieties or modifications, according to the age, constitution, vigour, and habits of the patient. Thus we have acute regular gout, chronic gout, retrocedent or metastatic gout, and what I shall call ill-developed or imperfect gout. A short notice of these, and of the treatment required respectively by each, will conclude this paper.

Acute regular gout occurs, in its simplest and best characterized form, in patients about middle life, and of sound constitution. For some days, or it may be for a week or two before the attack, there are symptoms of gastric derangement, such as loaded tongue, ill taste in the mouth, irregular bowels urine high colored, scanty or turbid, and depositing a red sediment. After some such symptoms, the patient is seized, often suddenly, with an acute pain in the foot or hand, usually in the ball of the great toe. The part becomes red, hot, swollen, shining; it throbs; the patient is restless and feverish; he does not sleep till towards morning, when the pain somewhat subsides. perspiration occurs, and the patient, except in severe cases, has some relief till the ensuing night, when the same symptoms recur. These diurnal or nocturnal attacks continue during from two or three to eight or ten days, after which the patient regains his usual health, and soon recovers the use of his foot, though sometimes there remains, for a longer or shorter time, a weakness in the part. In consequence of the restrictions of diet, and use of medicine, the patient often feels himself more alert and in better spirits, and with a better appetite than before, and he is apt erroneously to impute these effects to the arthritic attack.

The treatment should commence with a purgative, which may be a smart one if the patient is robust and plethoric, and the attack is acute. From ten to twenty grains of jalap, and from three to eight of calomel, or any other purgative of correspoding energy, may be ordered, though hardly anything else adequately replaces mercury as a purgative in the outset of gout. The above dose should be followed, in from two to five hours, with a draught, consisting of equal parts of the infusions of rhubarb and senna, containing a drachm of sulphate of potass, and a scruple of the carbonate of that alkali. After this, a diaphoretic tisane, consisting of one or two drachms of ipecacuanha wine, or four drachms of the solution of acetate of ammonia, in a pint and a half of weak tea is to form the patient's drink. The patient is to eat little or nothing for twenty-four hours, and no further use of purgatives is to be made, at least for a day or two. At night, a full dose of Dover's powders may be given. This will relieve pain, secure sleep, promote diaphoresis—each an important object. On the third day, the use of colchicum may be begun. I have always found this most efficacious when given simply in doses of from twenty to sixty drops of the wine in four or six ounces of distilled water, along with from five to ten grains of the nitrate of potass. To this, two drachms of the compound spirit of juniper, and half a drachm of the spirit of nitric ether, may be added. Few persons can bear or will require a dose of sixty drops of colchicum wine oftener than twice in the twenty-four hours. Many cannot endure a half or a third of that quantity.

Chronic gout requires much less active treatment than acute. But nearly the same medicinal agents are to be had recourse to in either sort.—However, some slight modification must be observed. The diaphoretics in chronic gout may be more stimulant than in acute. Thus the compound tincture of guaiacum, which is even hurtful in the latter is well borne in the former. Opiates may be also more freely used. And now, also, alteratives become necessary, the digestive organs beginning to participate in the general derangement; the biliary and other secretions to be less regular and efficient, chylification less perfect, and defæcation less active. Friction with a pommade, or soft ointment of four grains of veratrine in one ounce of lard, may be applied to the affected part; and a solution of veratrine, consisting of one grain thereof in two ounces of distilled water, a twelfth to an eighth part to be taken twice or thrice a day, or oftener, in a draught.

The treatment of metastatic gout is simple, though, not for that reason, always satisfactory or successful. What I mean is, that the indications are obvious. We must endeavor by sinapisms, hot pediluvia, blisters, stimulant frictions, to keep the gout in the feet or hands, or recal it thither. If the stomach is attacked, we must give cold or iced drink, with opium in it, the feet being simultaneously plunged in hot water with mustard dissolved in it. If the head is the seat of metastatis, while the feet are treated in the manner just stated, cold evaporating lotions must be applied to the temples, forehead, and occiput. If the heart is affected by metastatic gout, there is great danger, for we know not what to do. The best way is not to interfere with the heart at all, but vigorously to apply derivation or counter irritation to the extremities. As to the practice recommended by some of giving hydrocyanic acid in metastasis of gout to the heart, it is bad advice, and is not more reasonable than if, with a view to make a paralytic man steady, we made him drunk.

Ill-developed, or *covert* gout (we name it so in contradistinction to *overt* gout), is not the least important or least common form of this malady. It is, perhaps, the most frequent, and, in some senses, the most serious.—Considerable observation has satisfied me, that to smouldering gout are due many anomalous affections and pains which go under the names of hysteria, hypocondriasis, gastrodynia, neuralgia, cephalalgia, tic douloureux, spinal disease, nephritic derangement, &c.

Lancet, May 20, 1848, *p.* 548.

10.—ON CHLOROTIC ANASARCA.—By Dr. J. F. Duncan, Assistant-Physician to Mercer's Hospital, Dublin.

Anasarca may be divided into three distinct species which differ essentially in their nature, and require very distinct modes of treatment. The first is the inflammatory, such as is met with in connexion with scarlatina and ordinary exposure to cold: the second is the mechanical, arising from compression of important blood-vessels; and the third is that which depends upon peculiar alterations in the quality of the blood. In this species may be comprehended all those cases which arise from debility, from anæmia, from granular degeneration of the kidneys (this being really a secondary affection), and those, of which the present is an instance, which depend upon chlorosis.

[After remarking how important a knowledge of the blood has become,

since the revival, in late years, of a rational humoral pathology, Dr. Duncan, speaking of the blood, observes :]

There are three principal ways in which this fluid, so essential to health, may be altered to produce disease. In the first, the relative proportions in which the healthy elements exist in it are altered; in the second, some of them are entirely absent; and in the third, substances altogether foreign to its normal constitution are admitted into it. Of the first of these, we have examples in chlorosis and anæmia, two diseases generally confounded together, but which have been recently shown by Sir Henry Marsh, in an able paper in the fourth number of the Dublin Quarterly Journal, to differ essentially in their nature, as indicated by the specific gravity, colour, consistence, and temperature of the blood, and also by the various morbid affections which are associated with each.

The altered condition of the blood which prevails in chlorosis has a double tendency to produce dropsy. It is both thinner in its consistence and less stimulating in its properties than in health. The one of these facilitates transudation through the coats of the blood-vessels, and the other, by retarding the circulation, brings the current more directly under the influence of gravity so as to favour accumulations in those parts of the body which are most dependent. When the blood is rich and nutritious, and sufficiently stimulant, it imparts tone to the vessels, especially the veins, and keeps them in a state of constant contraction, the valves perform their office efficiently, and no stagnation can occur; but when the blood is in an opposite condition, as after protracted fevers and exhausting diseases, the very reverse takes place, the vessels become relaxed and distended, the valves are consequently rendered inefficient, and anasarca necessarily follows.

Time will not permit me to dwell upon the many important practical points contained in Sir H. Marsh's paper, which I cannot too strongly recommend to your careful study; but there are two common errors connected with chlorosis which he especially refutes, and to which I wish for a moment or two to call your attention. The first is the idea that there is an absolute diminution in the quantity of blood in this disease. So far is this from being universally the case, that he states it is not uncommon to find the circulating fluid actually increased in amount, though its quality is deteriorated. The practical value of this point is, that it is often the shortest and most effectual mode of improving the blood to commence by a small bleeding. The removal of a portion of the thin and watery elements makes room for the easier introduction of those saline and mineral ingredients which give consistence to the whole. When the absorbents are surcharged, it is difficult for them to act at all, much less with that energy which is necessary to bring about a speedy return to the healthy condition of their contents.

While, however, the general principle is kept in view, that a suitable abstraction of blood, even in chlorosis, may be productive of advantage, the greatest caution must be exercised in resorting to its use, because the enfeebled state of the system does not readily bear so debilitating a remedy, and it has often happened that protracted or even permanent injury has resulted from its injudicious adoption. The same object, however, may be obtained, as it appears to me, with less risk and with equal certainty, in another way—namely, by the use of purgatives of a mild but effective character.

The superiority of this practice to the other will be apparent on a little reflection. You cannot use the lancet at all without taking away from the patient some portion at least of the globulin, the most valuable part of the blood; whereas hydragogue cathartics merely act upon the watery element without affecting any of the other ingredients contained in it. The other error is, perhaps, not so common now as it was formerly, but it still exists among many of the less educated practitioners—namely, supposing that the disease depends upon suppression of the catamenia—a symptom that usually attends it.

The truth is, that whether this secretion be entirely suppressed or only reduced in amount, which is the more common condition of the two, the change is the consequence of the disease, not the cause of it. The impaired energy of the nervous system which results from the unstimulating character of the blood, leads to torpor of the whole glanular apparatus, as indicated by the costive state of the bowels and the diminished quantity of urine, as well as the symptom immediately under consideration. Nor is this error of a speculative character merely: like the former, it leads to important practical mistakes. Sir H. Marsh tells us he has known instances where the whole efforts of the physician have been expended upon the restoration of this function to its proper state, and expended in vain; the patient's condition having been injured, while the wished-for object has not been obtained: whereas when the state of the constitution has been improved by judicious management, the menses re-appear naturally, and resume the healthy character both as to quantity and frequency.

Dublin Medical Press, May 31, 1848, *p.* 337.

11.—ON THE TREATMENT OF ANASARCA BY INCISIONS.—BY M. LOMBARD, Liege.

[M. Lombard advocates the use of incisions in cases of anasarca, and states that when ascites co-exist with anasarca, not only is the latter palliated or cured, but in many cases the former also disappears. He says:]

We may lay it down as a rule that the ascites disappears with the anasarca, when it is consecutive to it, and does not depend on abdominal disease, except in the case of aneurism of the abdominal aorta, which comes under the law just laid down. I think that further observations will authorize us in ranging under the law which governs dropsy depending on diseases of the circulating system that which comes on in cases of albuminous urine, in anæmia, and the different cachectic conditions which are the result either of an alteration of the blood or of general causes; but the number I have already collected does not appear sufficient to establish it as yet.

I insist upon the circumstance of the disappearance of the abdominal effusion, because, as I have already said, that the fact, if it has been observed, has been considered merely as an unusual case, without perceiving that it is a general fact; and also because in several cases where I proposed the removal of the serum by incisions, the proposal was rejected as dangerous, and not capable of affecting the ascites. You have been able to assure yourselves that these incisions are by no means dangerous, and that they have the power of removing the ascites along with the anasarca.

"Why," you will say, "if it is true that certain forms of dropsy disappear after puncturing the legs, is paracentesis always performed?" The answer is easy; because it is not generally known that this may occur, and if such cases have been observed, they have been considered as exceptions. Perhaps, also, those who have tried this method have employed it where the original disease was in the abdomen, and consequently without success. They have not examined if the anasarca has preceded the ascites, which is indispensable for the success of the operation. Further, I have observed a curious case connected I think with those before us. It was a case of hydrothorax with anasarca, which disappeared after the evacuation of the serum by incisions in the legs, although it had previously resisted active treatment. In this case the pleuræ became filled during the progress of anasarca dependent on disease of the heart.

From the earliest periods the idea of treating dropsies by openings in the skin has been entertained. Nature, whose proceedings were followed by the ancients in their operations, taught them it, for anasarca sometimes disappears from natural rupture or gangrene of the over-distended skin. It is very probable that Rondelatius, who, it is said, was the first to entertain the bold and happy idea of opening the abdominal cavity to discharge the serum it contained, was led to it as well by the success of scarifications in dropsy of the cellular tissue, as by the thinning and spontaneous rupture of the umbilical cicatrix which he might have observed.

Why then has such an old-established and often so successful an operation been so much abandoned? The reasons are laid down in all authors—the fear of gangrene, of erysipelas, of sloughs, of troublesome ulcerations; and they resort to the operation only when all other means have failed and the skin is on the point of tearing, and then they merely make punctures or superficial scratches which permit the serum to escape in a slow and incomplete manner. This seems to involve several errors. First, is the delay; when the skin has been long distended, it loses its vitality, and in many cases sloughs form, when neither punctures, scarifications, blisters, cauteries, nor other means had been used which might have produced them. Secondly, the openings made are insufficient for the prompt escape of the serum, and inflame with great rapidity, causing great pain to the patient, and frequently giving rise to dangerous erysipelas.

All these disadvantages may be avoided by operating early, and instead of punctures, making four or five deep incisions down to the fascia, the third of an inch in length, in each leg, in the most depending position; the patient also must be in bed as little as possible, for there he is always wet and cold, and the position is unfavorable for the escape of the serum. He should be seated in an arm-chair near the fire, the legs naked and resting on cloths, and when we have wished to ascertain the exact amount of fluid that has escaped in the twenty-four hours, we have placed them in a foot-bucket. When the serum has all drained away, the legs should be supported by a roller. I have followed this plan for six years with perfect success in cases of anasarca, and, as I have already observed, the attending ascites has sometimes also been cured.—*Gazette des Hôpitaux.*

Dublin Medical Press, June 7, 1848, *p.* 361.

12.—ON THE ADMINISTRATION OF DIURETICS IN SOME CASES OF DROPSY.—By DR. JONATHAN TOOGOOD, Torquay.

[Dr. Toogood relates some cases which, after resisting ordinary diuretics, were cured by remedies which he mentions. The first was that of a man who had tertian ague, and was generally anasarcous. After the ague had been cured by the use of bark, various purgatives and diuretics were administered for the anasarca, but without effect. Dr. Toogood tells us—]

As every variety of diuretic had been repeatedly and ineffectually tried, I despaired of his recovery, when it occurred to me that the late Dr. Parry, of Bath, had recommended the fresh squill in a variety of cases, which he stated to have been successful in his hands. Six grains of fresh squill, in infusion of gentian, three times a day, considerably increased the flow of urine in four days, and, by gradually augmenting the dose, he was emptied, and recovered perfectly. I may add that this medicine was given by Dr. Parry, in some cases, to the extent of thirty and forty grains a day, and that he often prescribed it in asthma, combined with almond emulsion, occasionally adding to each dose a few grains of powdered myrrh, with the best effects.

[Another case was that of an unmarried lady, fifty years old, whose feet became anasarcous after exposure to cold. Notwithstanding the exhibition of various diuretics, especially squill and digitalis, the effusion increased, and extended to the abdomen, arms, and face.]

The urine coagulated much more, and more firmly than is common in dropsical cases, and the specific gravity was greater than on these occasions, being 1018. This excess of coagulum and specific gravity indicated a lurking inflammation, and as no organic derangement could be discovered, granular disease of the kidney was suspected. In this stage of the disease, a consultation with Dr. Blackall, a great authority in such cases, was held, who recommended that the capsules of copaiba should be taken two or three times a day, that the cream of tartar liquor should be drank very freely, and that she should use the vapour bath, beginning at 190°, and increasing it to 110° and upwards, if it could be borne. A moderate diet was was prescribed, with two or three glasses of hock daily. She rapidly improved under this judicious plan of treatment, and has continued free from any return of disease up to the present time. The urine was frequently tested during the progress of her recovery, and the coagulation gradually ceased, and ultimately disappeared entirely.

Prov. Med. and Sur. Jour., Sep. 6, 1848, *p.* 484.

13.—TREATMENT OF SEA SCURVY.—By Dr. Foltz.

The whole treatment of sea scurvy may be summed up in a few words. Supply the system freely with protein, by giving patients freely those vegetables in which it most abounds. Many English naval surgeons maintain that vegetable acids alone are not sufficient to cure scurvy, and that a portion of fresh animal food is necessary for a cure. In the first part of the opinion we cannot concur, and although fresh animal food will accelerate a cure, and should always be resorted to when it can be procured, yet the vegetables are all that are necessary in such cases; and where the fruits and vegetables in a recent state cannot be obtained, starch and lemon juice, both of which can be carried at sea in sufficient quantities will give us all that is required for the prevention and cure of scurvy on board ship, when combined with cleanliness, ventilation, abundance of water, and cheerfulness. Where there are mental despondency, dejection, and disappointment in a crew suffering from scurvy, as was the case with that portion of our crew whose period of service had expired, almost every effort to restore the health, so long as these depressing passions continue in operation, will be unavailing. The humane physician and the prudent commander would in such cases recommend a discharge of the crew, and a run on shore.

Medical Gazette, May 19, 1848, *p.* 849.

14.—ON SOME MORBID CONDITIONS OF THE BLOOD.—By Dr. A. B. Garrod, Assistant Physician to University College Hospital.

[Dr. Garrod distinguishes one class of diseased blood by the following characters :—]

"Blood in which matters formed by the metamorphosis of the tissues during the performance of the vital functions, or produced during digestion and nutrition, and which are destined for speedy elimination, become increased in amount, and hence give rise to various morbid symptoms." We have seen that most of these matters are in reality normal constituents of the blood, but in health their amount is exceedingly small. This is true with regard to the urea, uric acid, sugar, fat, &c.; their proportion, however, may become much augmented, and when such happens, a morbid condition of blood is produced. The most productive cause of such states is the imperfect performance of some one or more excreting function, due either to functional or organic disease in the excreting gland. Thus the urea and uric acid should be thrown out by the kidneys as soon as formed. When, however, the functions of these organs are disturbed, one or more of these matters are retained, giving rise to a state of blood, called uræmia. If the excretion of the bile, or, rather, the colouring and fatty matters of that fluid are impeded, these are retained in the blood, and cholæmia is produced. and so with other excreting functions. Again, we have found that sugar is most probably a normal constituent of blood; that the quantity contained in it depends much on the time from the ingestion of food; still in health its amount is always very small, and can with great difficulty be detected. In certain pathological conditions of the system, however, the formation of this principle become greatly increased, or its destruction or resolution into carbonic acid and water greatly diminished; it is then found in the blood in excess, and afterwards forced to seek some abnormal channel for its elimination—an office chiefly performed by the kidneys. Hence the presence of sugar in the urine becomes the most prominent symptom or sign of the existence of this pathological condition of the body, which is called melitæmia. The same remarks apply to that state of blood called piarhæmia, where there is a great increase in the amount of fatty matters. We shall make the following subdivisions of this form of diseased blood:—

Uræmia.—Where some of the principles of the urine are contained in the blood, in quantity far above the normal average.

Cholæmia.—Where certain constituents of the bile exist in the blood in increased proportion.

Melitæmia.—Where sugar is found in excess in the blood, and is likewise contained in the urine.

Piarhæmia.—Where the fats are greatly augmented.

Uræmia.—(1.) *Blood containing Urea.*—In healthy human blood, drawn from the living body, I have found that the urea can only be obtained in most minute quantities: thus in one case where I endeavoured to determine the amount quantitively, the proportion of the nitrate of urea from 1500 grains of serum was only 0.015; and taking the amount of urea in the nitrate at 50 per cent., it would give for 1000 grains of serum only 0,005 grains of urea.

In many diseased conditions of the habit, the amount of this principle becomes very greatly augmented. The only cause of this at present known appears to be defective action of the kidneys, produced either by functional or organic disease; for we have no evidence that an increased formation of urea in the system could alone produce this state of blood, independent of impaired renal action; nor will the administration of large quantities of urea give rise to any of the symptoms which have been considered as characteristic of the existence of an abnormal quantity in the blood.—Sometimes when the urea is increased, the other constituents of the urine are also found in the blood. This is especially the case in those acute affections where suppression of urine occurs; here, even, the odoriferous principle can be detected, especially during the evaporation of the serum; at other times urea may exist to a large amount, and yet most of the other principles may be nearly absent; such a state is seen in some cases of Bright's disease. The diseases in which urea has been found, are the various forms of albuminuria, as Bright's disease, congestion of the kidneys occurring after scarlatina, or from cold, &c., also in cholera, plague, some cases of fever, as typhus and yellow fever, and occasionally in gout. There are doubtless many other diseases, besides those I have just mentioned, in which urea exists in increased proportions; but as yet the subject has been but little investigated.

Albuminuria.—In Bright's disease, the blood has been repeatedly analyzed by various observers, and urea has been almost constantly found in it. We have already had to notice some of the peculiarities which the fluid exhibits in this affection—viz., the deficiency of the albumen in the serum, and its consequent low specific gravity. What has been determined as yet by Christison and others as to the condition of blood in the different stages of Bright's disease, or granular degeneration of the kidneys, may be thus stated:—In the first stage, when inflammatory affections are present, the blood on coagulation has a buffed and cupped clot, the serum is often turbid, of low specific gravity, and contains a considerable amount of urea. The buffed and cupped clot depends chiefly on the increase of the fibrine accompanying the inflammatory affections; the low specific gravity of the serum is owing to the deficiency of the albumen; and the excess of urea to the injury which the excreting function of the kidneys has experienced, and the diminished power of throwing off this body. Afterwards, as the disease advances, the clot becomes small and the serum in excess; this is due to the anæmia induced from the constant waste of the nutritive principle of the blood which passes unchanged through the kidneys; the serum is stated sometimes to recover its density, but generally it remains low; the fibrine may return to its normal average or not, according to the state of system as to inflammatory disease. The urea may at times decrease in amount, but generally it can be shown to exist in considerable excess.

(2.) *Blood containing Uric Acid in Excess.*—I have before told you that uric acid seems to be a constant constituent of healthy human blood, but that the proportion in which it exists is usually very small, appearing to depend much on the time which has elapsed between the ingestion of food and the abstraction of the blood. In some diseased states of the system, however, it accumulates, and then appears to give rise to certain morbid symptoms. The increase in the amount of uric acid in the blood may be caused by functional or structural disease of the kidneys; thus, where there is suppression of urine, as occurs in some cases of Bright's disease. Again in the early stages of this affection, and in simple congestion of these organs, its elimination is often retarded; but then it is not alone retained, for, along with it, other constituents of the urine are always associated. There is, however, one morbid state where it seems to be contained in large quantities in the blood, and not thus accompanied by these other matters; this disease is gout. In June, 1847, when examining the blood of a man suffering from this affection, to which he had been for some years a martyr, I found the presence of uric acid; and it was then shown to exist in the form of urate of soda, and as such could be obtained in a crystalline state. From 1000 grains of serum 0.05 gr. was obtained, though much was lost in the experiment.

Afterwards it was found in many other cases of gout, and in quantities very much larger than in health, or in any other disease, except where the functions of the kidneys were entirely suppressed. The paper containing the details of the original analysis on this subject was read before the Royal Medico-Chirurgical Society, and will appear in the ensuing volume of the *Transactions*. The conclusions which I then drew were—

1st. That during an attack the blood always contains uric acid, and that this body may be crystallized from it in the form of urate of soda.

2d. That the uric acid is diminished in the urine before and during a gouty paroxysm.

3d. That in those subject to chronic gout with tophaceous deposits, the uric acid is constantly present in the blood, and deficient in the urine, both absolutely and when compared with the other organic solids, and that the deposition of the chalk stones appears to depend on an action in or around the joints, vicarious to the uric acid excreting function of the kidneys.

4th. That from the blood of gouty patients, urea may sometimes be obtained (in quantities greater than in health) when no albumen is present in the urine, which may perhaps explain the frequent occurrence of œdema with gouty inflammation, a symptom which distinguishes it from most of the other forms. The other diseases in which I have found the proportion of uric acid increased in the blood are cases of albuminuria; and from the examinations as yet made, this increase seems to be greater in albuminuria depending on congestion of the kidneys, as from scarlatina, &c., than in the chronic cases of granular degeneration of these organs, unless very much advanced.

The quantitative analysis in these cases will be found in the paper I have just referred to; the results, however, may be summed up as follows, viz.: "That in albuminuria the amount of uric acid contained in the blood is generally augmented—sometimes but slightly, but at others to a considerable degree; but that even then the condition of the blood differs from that in gout, as the other elements of the urine are also present."

Cholæmia.—The bile consists of two distinct portions, one constituting the true bile, not an excrementitial body, but destined for the performance of some important offices in the economy, and for reabsorption; the other consisting of the colouring principle, a resinous matter, and cholesterine, which are found in healthy fæces, and appear to be entirely excrementitial. The presence in the blood of the former body, or true bile, has never been satisfactorily proved, though Enderlin has stated that he detected it in the blood of oxen and calves. It is very probable that, like urea and uric acid, it is always present in small quantities; but owing to our not being able to detect it so readily as we can these bodies, its presence has been overlooked. Simon has shown that it must exist in proportion much less than one-thousandth part of the weight of the blood; for he could readily detect bile in the blood when only half a grain of inspissated gall was added to 500 grains of that fluid. Whether in certain morbid states of the system its quantity becomes increased, we are not able to say; but that such an increase does not take place in jaundice we have many experiments to prove. We have no reason to suppose that in this disease its amount would be augmented, for icterus depends on some obstruction either to the secretion or excretion of the excrementitial portion; and the true bile, in such cases, would not be likely to be altered in amount. The only circumstance which I can suppose capable of causing its accumulation in the blood is the imperfect performance of the respiratory function, and it would be in slowly asphyxiated conditions that I should look for it.

Blood in Jaundice.—Icteric blood has been subjected to many examinations, and in all cases the bile pigment has been discovered. To prove its presence, we scarcely need the aid of chemistry, the colour of the serum being sufficient, which, in severe cases becomes dark red, in thin layers, exhibiting a bright orange appearance: nitric acid produces in it a peculiar change, causing it to become at first grass-green, then blue, red and yellow.

The causes of this condition of the blood appear to be either some impediment to the secretion of this colouring matter, as happens in certain states of the liver; or obstruction to its excretion, as from gall-stones, inflammatory condition of the duodenum, &c., and its consequent re-absorption into the blood. It then acts as a foreign body, and is thrown out by other channels, especially by the kidneys and skin, sclerotic coat of the eye, &c. The urine, therefore, becomes very dark from its presence, the skin colored, as also the sweat which then stains the linen; but in the fæces it is very deficient, or even altogether absent. In jaundice, the amount of fats in the blood is generally much increased.

Piarhæmia.—We have seen that healthy blood always contains fatty matters, consisting of seroline, cholesterine, phosphorized fats, margaric and oleic acids, the two latter, partly free and partly saponified; that the average amount of these bodies in health is about 1.6 in 1000 parts of blood and that the serum is usually quite transparent; it may, however, become turbid, owing to fatty matters derived from the chyle, on which subject Dr. Buchanan has made the following remarks. In the first place, he finds that the serum of the blood derived from a healthy man when fasting is quite transparent, and of a greenish yellow tint; that a mixed rich meal renders the serum white and turbid, an appearance which may commence half an hour after the meal, and continue ten or twelve hours, or even longer, according to the quality of the food and the state of the digestive functions; that starch, sugar, and other vegetable substances containing *no oil do not* produce this whiteness, nor albumen, fibrin, or casein, when free from fatty matters; that oils when mixed with protein or amylaceous compounds render the serum milky; gelatine also has the same effect, but this result is not conclusive, as some fat might have been mixed with the gelatine in the experiment.

Such a condition of the blood, however, would not be styled piarhæmia, a title only given to blood in which the fatty matters are greatly and constantly in excess; this state is sometimes found in Bright's disease, diabetes, some cases of cholera, and many inflammatory affections. The cause is at present but little understood, but it seems to be owing to some defect in the respiratory function, preventing the conversion of these bodies into carbonic acid and water. This explains why the excessive use of alcoholic fluids tends to produce fatty blood, a fact which has been tolerably well established, for in such cases the alcohol would take the precedence of these matters in becoming oxidized. Under the microscope, this kind of blood generally exhibits the presence of the fat in the form of oil globules; but this is not always so, for in a case which recently came under my notice, where a very large amount of fat was contained in the serum, only a granular appearance was seen, which might be mistaken for precipitated albumen; on warming the fluid, however, fat globules became evident.

Melitæmia, where sugar is present in increased quantities.—I have before mentioned the existence of sugar as a normal constituent of the blood, which I think has been sufficiently proved, although in a healthy state of system its quantity is undoubtedly extremely small, and not to be detected, except a few hours after a meal containing amylaceous principles. In some pathological conditions, however, sugar appears to be formed in much greater abundance than in health, or its resolution into carbonic acid and water to be somehow impeded; and hence its accumulation in the blood, and its elimination through abnormal channels, especially the kidneys.

Blood in Diabetes.—When diabetes was first shown to be accompanied by a saccharine state of the urine, it was supposed that this principle was a product of some abnormal action of the kidneys. This view was strengthened by the unsuccessful search for it in the blood. At the present time, however, we are no longer able to refer its origin to these organs, as it has been proved by many observers to be present in the circulating fluid, and that it can be separated from it.

Blood containing Lactic Acid.—In many diseased states, it has been supposed that excess of lactic acid existed in the blood, but this was at a time when this acid was thought to be a constituent of most of the animal fluids, and when its presence was rather assumed than proved. I am not aware that it has ever been demonstrated to exist, although there is great probability that such is the case even in healthy blood, for we have shown that it is a constant constituent of muscular flesh; its quantity in health must be very small, as it would doubtless soon become converted by the respiratory process into carbonic acid and water. Perhaps its excessive formation or imperfect destruction may sometimes be the cause of a morbid condition of the blood, and rheumatism has been frequently supposed to be somehow connected with an excess of this acid in the system.

An acid state of blood has now and then been found, and such a condition has been presumed to depend on free lactic acids: this possibly may sometimes be true, but no doubt it more frequently results from the presence of free fatty acids. Great obscurity still hangs over this subject, and many accurate observations are required before our information on these points can be considered to be at all satisfactory.

Lancet, Aug. 19, 1848, p. 197, and Aug. 26, p. 225.

15.—DEPURATION OF THE BLOOD.—By Dr. Golding Bird, F.R.S., &c.

[The following views of this able physician are exceedingly interesting;

and when carried out in practice will enable us to treat many obscure diseases with more confidence and success. Speaking of the probability of our being "able ultimately to reduce all the non-organized products of vitality to recognized chemical laws, and thus to produce them at will," Dr. Bird, referring to a former Lecture, says—]

You will remember, I shewed you urea prepared artificially from blood. I prepared before you the aromatic oil of the Spiræa ulmaria, or queen of the meadows, by oxidising the active element of the willow bark. I shewed you how to procure the active and fœtid principle of the Valerian, by the oxidation of the oil obtained during the fermentation of grain. I exhibited to you a fluid exhaling the delicate fragrance of the pine-apple, prepared from the acid of rancid butter. I pointed out to you the mode of converting the oil of mustard into the oil of garlic; and the last illustration I occupied your time with, was the artificial formation of the aromatic oil which is the source of the fragrance of the Gaultheria procumbens, from woodsplint, and a body attained by oxidating salicine or indigo with caustic potass. Easily and readily could I have multiplied such illustrations, but the time at my command would not justify my thus trespassing upon your patience, I cannot, however, yet part with the oil of Gualtheria, without drawing from it another useful lesson, and one which will give us much instruction in our views of the constitution of the products of organic laws.

I have shown you that this oil may be regarded as a spiroylate (salicylate) of oxide of methyle; but the formula for this substance may also be resolved into that of hydrated anisic acid—a body obtained by the oxidation of the well known oil of aniseeds.

$$\underbrace{C_{16}H_7, O_5}_{\text{Anisic acid.}} + \underbrace{HO}_{\text{Water.}}$$

Now, hydrated anistic acid has the property of being resolved into carbonic acid, and an aromatic oil called anisol, when dropped on a body having an affinity for carbonic acid, as barytes. This enables us to perform another chemical miracle: for on dropping the oil of Gaultheria, whether natural or artificial, on some hot baryta, its elements assume a new arrangement and instead of being separated into salicylic acid and oxide of methyle, they are resolved into carbonic acid and anisol; thus

$$C_{16}H_8O_6 = 2\,CO_2 + \underbrace{C_{14}H_8O_2}_{\text{Anisol.}}$$

The odour of the oil of wintergreen becoming immediately replaced by the peculiar pungency of the anisol.

If we are thus able to metamorphose one body into another by the abstraction or addition of one or more elements, we shall find less difficulty in understanding how bodies possessing the same aggregate number of elements, but differently arranged, may be converted into each other, and of which the chemistry of the living organism furnishes so many examples.

In this glass is a specimen of uric acid formed in the organism of a huge serpent, in the Zoological Gardens. A portion of this very substance has been oxydised by heating it with some peroxide of lead—a rearrangement of its elements occurred, and thus we have the lustrous crystalline body I now shew you—allantoin, the characteristic element of the allantoic fluid of the fœtal calf.

It would be an easy task to bring before you a host of such examples: those I have adduced will be, I hope, sufficient to bring before such of my auditors as have not had time to give much attention to the later researches in organic chemistry, ample evidence of the progress already made towards at least imitating, in the laboratory of the chemist, the results obtained in the laboratory of life. It is true that our very success gives us a lesson of humility; we cannot, and in all probability never shall be able to take the crude juices absorbed by the plant from the earth, and convert them into the same elements which are elaborated from them by the living organism; all that human science has yet done, is to take one of the proximate results of a living being, and metamorphose it into others; still, I am anxious to impress upon all who are inclined to smile at the application of chemical reasoning to physiology, that this is all we presume to be able to do when attempting to explain the probable formations of the elements of excretions from the blood or from the food. I am now anxious to apply such results to one of the most important circumstances connected with the treatment of the disease—viz., our power of modifying the excretions, and controlling, to a certain extent, at least, one mode by which that great and important element of health, the depuration of the blood is effected. I am anxious, indeed, in this place, to develope the idea, which for years I have endeavoured to work out, that there is something beyond the mere excretions of the liver, the skin, the lungs, or the kidneys, to be regarded in the great function to which I have alluded—that although in the broadest and most general view it is correct to admit that the liver depurates the blood of excessive carbon, and the kidneys of nitrogen, yet that there is an important and serious fact, far before this, to be noticed, although overlooked and neglected. This fact is the one I am now anxious to develope—that if the excretions be carefully examined *quoad* their chemical constitution, it will be found that each depurating gland can perform more than one function—that although under ordinary circumstances, a given organ may chiefly excrete carbon, yet that it also excretes a certain proportion of some other element; and in disease or imperfection of the organ, whose normal function it is to excrete this particular element, its elimination may be actually effected by that structure, which in a state of health secerns a minimum of it. Thus, I would not only, with the generally received physiology, invest each depurating organ with its particular function, but I would do more, and regard each chemical element of an excretion as performing a particular office. I hope thus to be able to point out how the power of one organ, compensating for the deficient functions of another, not only involves no absurdity, but is consistent with fact. If this can be demonstrated, or even shown to be probable, it is obvious that no small light may thus be thrown on some, at present, obscure parts of therapeutics. The relation of the different elements of the excretions to each other is really much more intimate than has been suspected; and our powers of modifying that great and important function to which attention has been but lately drawn, the metamorphosis of our worn out and exhausted tissues; in other words, the phenomena of waste, may perhaps turn out to be more complete than we have ourselves anticipated. This destructive assimilation of our tissues, exercises an important, nay, we may even say, all-important influence on our well being. Look at one person, who, instead of having his worn-out tissues resolved into the soluble elements of excretions, converts them into uric acid, and its presence in the blood and deposition in the joints becomes his bane and misery, in developing the tortures of gout. Or glance at another, whose old tissues are broken up into oxalate of ammonia, which in the presence of the calcareous salts of the urine, wears out the sufferer with the irritation of a mulberry calculus in his kidney. Others again hardly metamorphose their exhausted atoms at all, but with a lessened vitality arrest them in the glandular textures, developing the distresses of scrofula. These are but a few of the abnormal results of waste of tissues. If we can ever succeed in controlling this, it must be by directing the functions of the depurating organs.

[Dr. Bird proceeds to treat the subject under the following heads:—]

1. The influence of modifying causes in controlling organic metamorphoses.
2. The relations of the elements of the excretions to each other, with the view of demonstrating their probable compensating function.

3. The application of these views to the depuration of the blood in the treatment of disease.

[For full information upon these points we must refer the reader to the lectures themselves, as published in the Medical Gazette; contenting ourselves with extracting the following observations on chemical forces. Dr. Bird says,]

One of the most marvellous circumstances observed in the chemistry of organic life, and one which, in the views of many, more especially demands our adhesion to the doctrine of a special vital force, is the formation of bodies apparently very different, in different parts of the organism, from one and the same pabulum—the blood. If, however, instead of throwing over this great fact the veil of obscurity, which is always woven from the blind belief in occult causes, we reflect upon some well-recognized phenomena occurring in organic chemistry, we shall find ourselves in many instances either compelled to abandon this notion, or to invest dead matter with the same attribute. The power of selecting or attracting certain elements by the different secreting glands from the blood, will be found to be not a whit more mystic and unintelligible than the most frequent and recognized results occurring in the chemistry of inorganic matter.

The result of researches into the ultimate constitution of matter, especially in relation to the electric and allied forces, has demonstrated the existence of certain polar attractive powers in the atoms of every form of matter. Hence the ultimate chemical molecules of bodies can hardly be regarded as inert and passive, but as really animated by forces often of remarkable intensity.

The chemical tendency of almost every body is capable of remarkable variation under different circumstances; but of all those we are acquainted with, there are none in which this tendency reaches so high a pitch as at the instant when chemical atoms are separated from each other. Hence, to give a body its utmost intensity of chemical tendency, we must combine it with another body, and present it to a third at the moment of separating the combinations first formed. Thus, let us suppose A and B are capable of uniting and forming a new and stable compound, yet it may happen that their chemical tendency is so slight that we may actually place them in contact without their combining, or presenting the slightest attractive force for each other. But if we take a compound of A with C, and place B in contact at the instant C is by some force separated from A, they will at once unite and form the new combination. Thus it is assumed that the chemical tendency or polarity of bodies is most active and intense at the moment of their separation. And we must not lose sight of the fact, that at the moment of this separation being effected, electricity is always evolved.

It is universally admitted that the material elements of our tissues are always in a state of change, that at each moment of our existence effete and exhausted tissues are in a state of metamorphosis, the ultimate element separating under the disorganizing influence of inspired oxygen to form the element of excretions. Thus, we have constantly in the wonderful laboratory of our frames ultimate atoms in a state of active chemical tendency, or, in other words, in a nascent state. If, then, when such atoms of carbon, hydrogen, nitrogen, and oxygen (in a state of high chemical tension, at the instant they are set free from their previous union, when forming part of the structure of any organ), come in contact with benzoic acid, they at once combine with it in the same proportion in which they exist in sugar of gelatine, and hippuric acid results. If any person swallows thirty or forty grains of benzoic acid, it will be absorbed with his blood, and in the capillaries will come in contact with the elements in question; hippuric acid will be generated, and, in accordance with the law of all soluble matters in the blood not required for the purpose of nutrition, filtering off by the kidneys, *it will* be found readily in the urine. The specimen which I now shew you was thus prepared from the urine of a patient to whom I had administered benzoic acid. This contains all the benzoic acid I gave him, plus carbon, hydrogen, nitrogen, and oxygen, in the proportion to form sugar of gelatine. It does not necessarily follow that these elements be always separated in the proportion to form glycocoll: if we throw into the system a body which differs in its composition from it, in a ratio quite distinct from that of benzoic acid, still the nascent atoms will be seized to form hippuric acid.

The administration of the glycocoll, to which I have just drawn your attention, affords us another instance of this appropriation of the nascent atoms of exhausted tissues. This body may be taken in large doses, and yet not a trace will appear in the urine. It appears to circulate in the blood, and, coming in contact with the nascent molecules of carbon, nitrogen, and oxygen, in the proportion to form cyanic acid, uric acid is formed, which appears in the urine, for—

	C	H	N	O
1 Glycocoll	4	4	1	3
3 Cyanic acid	6		3	3
= 1 Uric acid	10	4	4	6

the large excess of uric acid which thus is removed from the blood being mixed with, or replaced by, urea, if sufficient oxygen be present.

I would for an instant occupy your attention by inquiring whether any explanation can be given to the fact of high polarity or chemical tendency possessed by nascent molecules. Can we, I would ask, from the facts to which I have alluded, draw any conclusion which will express a general condition for the development of the power in question? After much reflection on this matter I have convinced myself that a key to this mystery is easily to be found. I believe that bodies possess this high chemical tension when in a nascent state, not because of their being in a state of evolution or *nascence* (if the term be permitted), but because of, at that instant, their being of necessity in a state of ultimate molecular division. Whenever, then, and by whatever means, we can separate bodies into their ultimate constituent molecules, we shall always possess them endowed with their natural amount of chemical tendency. Throwing them into a nascent state is, then, so far important, from its presenting them to us in a molecular form for an instant; could we retain them in this molecular form, we should always have them in a state of chemical tendency. Of this we have an excellent illustration in the state in which metals are left when reduced at a low temperature. Thus, if the oxides of iron or cobalt are heated below ignition, and exposed to the influence of a current of hydrogen gas, the metal parts with its oxygen to the hydrogen at too low a temperature to allow the molecules as they are deoxidized to unite by fusion: accordingly, a metallic powder is left, actually made up of separate molecules. In closed tubes these will keep for years; but the instant they are exposed to the air, so high is the chemical tendency of the substance, that oxygen is absorbed with rapidity, the mass becoming red hot.

Med. Gaz., June 2, 1848, p. 929.

[Dr. Golding Bird then gives us an interesting account of the manner in which some of the secretions assist in the depuration of the blood; and although it would be more in accordance with the arrangement of articles in this volume to place his views on the chemistry of the urine, &c., in their proper situation, yet we think that this very interesting subject would be thereby disconnected; and therefore we will proceed in this place to state some of his views: first, with respect to depuration of the blood by means of *the liver*, he says,]

The biliary secretion is most correctly to be regarded as consisting of a compound of an organic electro-negative body with soda, a bilate of soda. In addition to this, a small quantity of cholesterine and fatty acids, with mucus and a colouring matter, or *biliphaein*, are present. The colouring matter is very small in quantity, just sufficient to give a yellow tint to the fresh secretion, although in disease it is often formed in very large quantity. It may be regarded as an important means of elminating carbon from the body when the normal secreting functions of the liver are partially or wholly suspended. The composition of this pigment is, from the analysis of Professor Scherer—

Carbon . . .	98·182
Hydrogen . .	7·437
Nitrogen . .	7·047
Oxygen . . .	17·261

This body can be easily detected in fluids containing it, by the addition of nitric acid. This is best observed by pouring some of the fluid on a white surface, and then allowing a drop of the acid to fall on it. I now spread on the surface of this white card a thin layer of some urine containing this substance, passed by a patient with jaundice, and in whom the kidneys are acting as a liver in depurating the blood of carbon. On adding a drop of nitric acid, a beautiful iridescence, or play of colours, from green to pink, immediately takes place. This effect is quite characteristic of biliary colouring matter.

Bile-pigment is unquestionably a result of metamorphosis of blood, probably of old blood corpuscles: it bears no small analogy to blood pigment; and an Italian chemist, Polli, has lately suggested that they are producible from each other by processes of oxidation or reduction. He has drawn attention to the fact of blood and bile assuming an exactly opposite series of colours by exposure to the air. The play of colours in blood he noticed in the well-known varying tints of an ecchymosis, and the changes of colour in bile-pigment he watched by simply exposing it to the air. According to his observation, the following changes of colour were observed:—

Blood-pigment—Black, violet, blue, green, yellow.

Bile-pigment—Yellow, green, blue, violet, black.

On the table is a glass vessel containing a diluted solution of blood-pigment. I will now pass through it a current of sulphuretted hydrogen. In a few minutes its crimson hue is replaced by a darker hue, which, by reflected light, is olive green. Attention was long ago drawn to this fact by Gmelin, as an illustration of the relation existing between the pigments of bile and blood. Some years ago I noticed this result in a paper published in the Medical Gazette, in which I first pointed out the serious error of regarding the green fæculent discharges so often noticed in infancy as owing their colour to an excess of bile, tracing their tint to altered blood, and shewing that this condition should be regarded as a form of melæna, and the too popular treatment by mercurials repudiated.

Medical Gazette, *June* 16, 1848, *p.* 1022.

[But it is on the *chemistry of urine* that the remarks of Dr. Bird are more particularly interesting and applicable to the treatment of disease. On this subject he says:]

Remembering that the urine is most strictly an *excretion*, consisting of matters resulting from the metamorphoses of worn-out tissues or ill-formed blood from mal-assimilated food, unlike the bile, which plays an important part after its separation by the liver, I am particularly anxious to impress upon you the necessity of regarding the urine as made up of water, and the solids dissolved therein, and the necessity of there being a certain and definite amount of the latter excreted in a given time, however much the former element may vary in quantity. The quantity of solid constituents of the urine excreted in twenty-four hours may be fairly taken as an index of the amount of tissue or blood-elements metamorphosed in that time. Now we here encounter a capital error, almost invariably overlooked, when we are regarding the urine as the result of a depurative function. This error consists in contenting oneself with the examination of a specimen of the urine carelessly taken at any time of the day. Now although, when examining the urine with a view to the detection of abnormal ingredients, as albumen, blood, bile, or sugar, this is often sufficient; still this off-hand examination is utterly valueless in the cases we are about to consider. The only mode of gaining any information into the amount of work done by the kidneys in depurating the blood, is to collect the whole amount excreted in twenty-four hours, and then, from the analysis of an average sample, to determine the composition of the whole.

Notwithstanding the latitude which, as a necessary result of obvious causes, must be allowed to anything like an exact and definite statement regarding the quantity of matter excreted in a given time by the kidneys, we are able, from the results of a very large number of investigations, to arrive at a very close approximation to the truth. As an average, then, the following may be regarded as a correct view of the matters separated from the blood by the kidneys in the course of twenty-four hours in a healthy man, the whole being dissolved in about forty ounces of water:

Urea	270	grs.	
Uric acid	7·6	"	
Creatine Creatinine	?		176
Uroxanthin	?.		
Sulphur extractive	20?	"	
Volatile saline combinations and indefinite organic matters			
Fixed salts	170	"	

Of these ingredients, our knowledge of the relation of the urea and uric acid is tolerably satisfactory. That they are both produced by the metamorphoses of nitrogenized elements of worn-out tissue or mal-assimilated food is certain. Their quantity may, indeed, be assumed as a measure of the amount of the destructive assimilation of nitrogenized tissues or other matter in a given time. Urea contains 46.65 per cent. of nitrogen, and uric acid 33.36 per cent.; thus the average quantity of urea excreted in twenty-four hours would indicate the metamorphoses of about 800 grains of muscular tissue or blood, and the uric acid of about fifteen grains. Now if urea and uric acid perform a similar function—that of acting as the agents for excreting nitrogen—it may be asked, what relation do they bear to each other? The view rendered popular by the illustrious chemist to whom I have so often referred, is, that the nitrogenized matters are first metamorphosed into uric acid which by the continued action of oxygen and water conveyed in the arterial blood, is next converted into urea; for

			C N H O
1	atom of	uric acid	10+4+4+6
+4	"	water	4+4
+6	"	oxygen	6
			10+4+8+16
—6	"	carbonic acid	6 12
=2	"	urea	4+4+8+4

On this hypothesis, uric acid, absorbing water and oxygen, is split up into urea, which is separated by the kidneys, and carbonic acid, which is excreted by the skin or lungs. I must not allude to the objections which were urged against this view by myself and others; they are well known, and, I believe, very generally admitted. It is at all times better to confess our ignorance than to give a plausible but unfounded explanation of any phenomenon. And I fear this confession must be made in relation to the question before us. We do not know why, under some forms of disease, and even in health in some constitutions, the waste of the body is peculiarly prone to cause the nitrogenous matters to build up uric acid. How often has every one of us cause to lament this tendency—a tendency often inherited, as witnessed in those who suffer under the infliction of gouty progenitors. Some animals present this peculiarity in their waste or metamorphosis of tissue. The feline tribe, as a rule, produce nothing but urea; the serpents nothing but uric acid. Both are carnivorous, and their differences of habits and temperature of their blood, have been called in to explain this difference. But this explanation fails; for in the vast tribe of birds and true insects living on every possible variety of food, having every imaginable variety of habit, each and all convert their nitrogenized elements into uric acid exclusively; while the spider tribe, from the researches of Dr. John Davy, appear to convert their worn-out structures into the curious body, uric oxide or xanthine. Again, we cannot in these animals convert uric acid into urea by any alteration of diet or habit. The idea lately promulgated of carbonized food inducing the production of uric acid by monopolising that oxygen which should be employed naturally by converting uric acid into urea, is negatived by the facts observed in herbivorous animals, which excrete a large quantity of a body rich in carbon, hippuric acid, and simultaneously separate an enormous quantity of urea: thus, in a cow fed on potatoes, 1000 grains of its urine of sp. gr. 1·040, contain 18·48 of urea, and 16·81 of hippurate of potass. And the urine of a horse contained in 1000 grains (sp. gr. 1·0373) 31 grains of urea and 4·80 of hippurate of potass. The pig is an animal peculiarly prone to lay up large stores of fat, and, therefore, on the views of Professor V. Liebig, laden with a body whose chief function is to appropriate oxygen, and yet in the urine of this most greasy animal, no uric acid was found, but urea existed to the amount of 4·9 grains in 1000. The analogous fact of diabetic persons excreting much uric acid, I have elsewhere noticed. We must be content at present with assuming that, while in man the nitrogenized matters are in health chiefly metamorphosed into urea, still that under certain states of the system, either induced by disease or acquired by inheritance, he imitates the birds, serpents, and insects, in converting them into uric acid, and even sometimes, although rarely, he resembles the spider in having these matters appearing metamorphosed into the uric or xanthic oxide.

We have a beautiful proof, if proof were wanted, of the depurative function performed by uric acid, when imperfectly assimilated nitrogenised food enters the blood, in some late experiments of Boussingault's performed on ducks. This very careful and laborious observer first carefully examined the quantity of uric acid excreted from the metamorphosis of tissue of the animal, by ascertaining the quantity excreted in a given time by a duck deprived of food for some hours; in another who had been made to swallow balls of clay; and a third who had been fed on gum—a body nearly free from nitrogen. He then proceeded to ascertain the increase of the acid excreted after the ingestion of various articles of food. I have arranged the following table from these experiments, having reduced their results to the same times; all the weights being calculated to English grains:

Uric Acid excreted by ducks in 24 hours.

Food administered. .	None.	Balls of Clay.	Gum.	Casein	Gelatine.	Gelatine.	Fibrin.	Flesh.
Quantity digested . .	none.	none.	163·24	426·64	1490·8	1713·	635·2	956·34
Uric acid excreted .	4·163	4·163	4·412	162·4	157·08	203·28	138·6	291·0
Nitrogen in the food . .	none.	none.	?	66·54	271·1	311·76	99·82	149·136
Nitrogen in the uric acid . . .	none.	none.	?	53·59	51·83	67·08	45·7	96·03

The tabular view of Boussingault's researches is peculiarly instructive, and places beyond all doubt the real office of uric acid, at least in those animals which normally excrete their nitrogenized elements in that form. Analogous experiments of Lehmann and others, have shewn that urea performs a similar function in man. The only difficulty investing the subject, is simply the question, why urea is sometimes the form in which nitrogen is evolved; but why at others, uric acid performs this function. That the view of Professor V. Liebig is untenable I have already expressed my opinion, and serious objections are opposed to the notion of uric acid being, in man at least, the result of the metamorphosis of one set of tissues, and urea of another, since that in ducks, in Boussingault's experiments, not a trace of urea was excreted, although carefully looked for, and yet structures physiologically identical with those of man, and of carnivorous animals, must have undergone metamorphosis. The true physiological relation of urea to uric acid is still one of the *desiderata* of science.

[The following table, showing the relation between "the bile and urine in their respective depurative functions," is also taken from Dr. Bird's very interesting course of lectures:]

	Bile.	Urine.
Elements depurating the blood of Carbon—	Cholalic Acid. Dyslysin. Biliphaein.	Uroxanthin. Hippuric Acid. Purpurine. Biliphaein.
" " " Sulphur—	Taurine.	Cystine? Sulphur-extract
" " " Nitrogen—	Glycocoll.	Urea. Uric Acid.

Medical Gazette, *June* 30, 1848, *p.* 1106.

The physiological indications fulfilled by the urine are familiar to all: we know that the kidneys pump off from the blood all excess of water, that they remove the metamorphosed products of effete tissues or mal-assimilated food, chiefly, in the form of urea, creatine, creatinine uric acid, hippuric acid, uroxanthin, and a peculiar body abounding in sulphur; but we also know that the researches of Wöhler have shown something more, viz., that whatever substances exist dissolved in the blood, not necessary or fit for the repair of the structure of our frame, invariably escape from the body by the kidneys. The injection of saline bodies, colouring matter, &c., readily proves the truth of Wöhler's statement. These bodies are, however, often excreted in a metamorphic state, and hence we must not expect to find them in the urine in the state they entered in the blood; thus benzoic acid, hydruret of salycyle, sulphuret of potassium, appear respectively as hippuric acid, salycylic acid, and sulphate of potass, in the urine; and the evidence I brought forward on such changes in my second lecture, is, I hope, not forgotten. On this account, if it be granted that in a given disease a man perfects in his own body a septic poison, as deadly, perhaps, as that of the puff-adder, and capable of producing as malignant effects, if introduced into the blood of a healthy person—if such poison really exists, and be ultimately got rid of by the kidneys, it is by no means necessary to find the urine as poisonous as the blood, or other secretions of the patient; as the septic matter, or the results of the metamorphosis of tissues under its influence, will in all probability be resolved into some of the now well-recognized elements of the urine. Although, indeed, even this may occur, as shown in the celebrated debauches of the Kamschatdales, in the amanita muscaria. When this fungus (rare among them) is found, a party partake of it with the gusto with which the Highlander swallows his whiskey; and they become very drunk. Anxious, perhaps, to prolong their conviviality, no other amanita can be found—how are they to proceed? There is no difficulty, however, on this matter, for they have discovered that the intoxicating element escapes from the blood—which it had entered—by the kidneys: and thus a second day's debauch is economically kept up by quaffing their own urine, which is made to replace the more elegant, but scarcely less injurious, alcoholic stimulant of more favoured countries.

[Dr. Bird observes that if it can be shown that sudden improvement occurs in a patient, concomitantly with an enormous increase in the amount of solids in the urine. the old doctrine of critical excretions from the kidneys will receive some support. In reference to the mode of detecting such a condition of the urine, Dr. Bird says,]

In a paper published in the Medical Gazette two years ago, I pointed out, for the first time, the importance of determining the amount of *real urine* passed by a patient. By this term, *real urine*, I understand the solid elements of the urine, as distinct from the water in which they are dissolved. Water, although an important, is not an essential element of the urine: it may be excreted by other enunctories; but not so the matters dissolved therein: these seem, except in mere traces, to be only able to escape from the body at the outlet afforded by the kidneys, and indeed, from a structure of those glands distinct from that which pours out the water. In the paper alluded to, I pointed out the mode of determining this important question at the bed-side, and hinted at the results which would probably be obtained by it. From that moment I have never lost sight of the inquiry, and one among many of the results flowing from it I now shall bring forward.

[After remarking upon the importance of first ascertaining the quantity of urine secreted during the twenty-four hours, Dr. Bird proceeds to say:]

The characteristic function of the organs under consideration must undoubtedly be regarded as the excretion of highly nitrogenised matters derived either from the wear and tear of the animal tissues, or from imperfectly assimilated food. Therefore, to obtain a measure of the amount of integrity from this great depurating function, we must not only measure the urine, but calculate with tolerable accuracy the amount of solid matters really existing in it. This can, of course, be effected by the evaporation of a given quantity to as dry an extract as can be obtained. The practical difficulties attending this process are familiar to every one who has ever performed the task; and, moreover, the time required for its performance would preclude its being had recourse to sufficiently frequent to be of any real service. I have elsewhere noticed the objections to this mode, as well as the advantages presented by the more rapid and easy determination of the quantity of solids from the specific gravity of the urine.

Although ready to admit that this mode of calculating the quantity of solids is not susceptible of rigid accuracy, still I maintain that the total error existing in a series of observations thus made, will be far less than if actual evaporation of the urine was performed; and further, the large number of observations capable of being thus made by every one, amidst the fatigues of large practice, render it of infinitely greater value than a process which requires time and practical skill for its performance.

The following table presents us with a mode of recollecting the quantity of solids existing in urine of different specific gravities, when the table is not at hand for reference—a piece of short memory of no small service in practice. Thus, if the specific gravity of any specimen of urine be expressed in four figures, the two last will indicate the quantity of solids in a fluid ounce of the urine, within an error of little more than a grain, when the density does not exceed 1·030; above that number the error is a little greater. To illustrate this, let us suppose we are called to a patient, the integrity of the depurating functions of whose kidneys we are anxious to learn. The quantity of the urine excreted in twenty-four hours amounts, we will suppose, to three pints or sixty ounces, and the density of the mixed specimens passed in the time alluded to is 1·020; now we merely have to multiply the number of ounces of urine by the two last figures of the specific gravity, to learn the quantity of solids excreted; or $60 \times 20 =$ 1200 grains of solids. If the table were at hand, the calculation would be more rigid, for we should then multiply 60 by 20·79, instead of 20: the product, 1247 grains, shows that by the former mode an error of 47 grains has been committed—an amount not sufficient to interfere materially with drawing our inductions by the bed-side, and of course capable of immediate correction by referring to the table at our leisure.

Specific Gravity.	Weight of 1 fluid oz.	Solids in f℥j.—grs.	Specific Gravity.	Weight of 1 fluid oz.	Solids in f℥j.—grs.
1010	441·8	10·283	1025	448·4	26·119
1011	442·3	11·336	1026	448·8	27·188
1012	442·7	12·377	1027	449·3	28·265
1013	443·1	13·421	1028	449·7	29·338
1014	443·6	14·470	1029	450·1	30·413
1015	444·0	15·517	1030	450·6	31·496
1016	444·5	16·570	1031	451·0	32·575
1017	444·9	17·622	1032	451·5	33·663
1018	445·3	18·671	1033	451·9	35·746
1019	445·8	19·735	1034	452·3	35·831
1020	446·2	20·792	1035	452·8	36·925
1021	446·6	21·852	1036	453·2	38·014
1022	447·1	22·918	1037	453·6	39·104
1023	447·5	23·981	1038	454·1	40·206
1024	448·0	25·051	1039	454·5	41·300

From a large number of observations, it appears that the average amount of work performed by the kidneys in the adult, may be regarded as effecting the secretion of from 600 to 700 grains of solids in twenty-four hours. Although certain peculiarities connected with muscular exercise, regimen, and diet, as well as certain idiosyncrasies of the patient, may influence this, yet if we regard 650 as the average expression of the number of grains of effete matter excreted in twenty-four hours by the kidneys, we shall not commit any very serious error. In calculations of this kind much latitude must be allowed, and it ought at least to be assumed that the kidneys may excrete fifty grains more or less than the assumed average, without exceeding or falling short of their proper duty.

I have in this as well as in the preceding lectures, repeatedly used the term *depuration of the blood*, and have referred to it as an expression of a great fact. Some few years ago it would have required no little courage to have even used this term, for it would have been by many regarded as at least redolent of the sybils of the wash-tub, among whom and their congeners there is always an aptness for referring all diseases to the "blood being in a bad state," or simply "bad blood," as all who have had much to do with dispensary practice can amply testify. Yet so much favour has a modified humoralism gained in the sight of the reflective physician, that not only will such expressions pass current, but hosts of affections are now regarded as strictly blood diseases, or conditions of *cacoæmia*—another illustration of scarcely any popular opinion or prejudice existing without some admixture of truth. Admitting in general terms the fact that the kidneys do depurate the blood of from 600 to 700 grains of solid matter in the twenty-four hours, I am anxious to remind my readers that not only does this occur in accordance with fixed physiological laws, but that the proportion of solids excreted at particular parts of the day vary according to the amount of impure matters existing, and present in the blood. I will select but one among many illustrations which I have at hand for this purpose. In a person in good health, the bladder was completely emptied, and the urine afterwards secreted was collected the next day at 8 A.M., 12 and 5 P.M., and 11½ P.M., the total quantity voided being twenty-four ounces, but a very small quantity of fluid having been taken. The urine voided at 8

A.M. was evidently excreted from the blood independently of the influence of the blood, and may be regarded as a measure of the quantity required to be removed for the depuration of the blood of the effete matters entering it from the metamorphosis of tissue; that passed between 8 and 5½ contained the addition of imperfectly assimilated matter derived from breakfast; and that voided at 11½ contained the results of mal-assimilations of dinner. The table before you exhibits the result of the analyses of these specimens:—

When passed	8 A.M.	12 and 5 P.M.	11½ P.M.
Quantity	℥viij.	℥vj.	℥viij.
Sp. gr.	1·016	1·020	1·030
Uric acid	8 grains	2·4 grains	4·8 grains
Urea	50·9 "	41·16 "	88·2 "
Creatin, animal matter, and volatile salts	62·46 "	36·78 "	123·72 ".
Fixed salts	18·4 "	44·4 "	35·2 "

We thus find that the blood alone yielded 114·16 grains in 8½ hours.
" " plus breakfast 80·34 " in 9 "
" " dinner . 216·72 " in 6½ "

In this example we have merely traced out the excretion of a definite amount of matter from the blood in health, and when the processes are as little as possible interfered with; this observation bearing, indeed, a close resemblance to the interesting experiments of Boussingault with ducks. We, however, will now pass to the consideration of another illustration, in which the quantity of effete matter excreted is considerably increased from the leaven of disease. An illustration also of another fact, and a very important one, to which I have already alluded—that a direct ratio exists in certain diseases between the excretion of a definite portion of effete matter from the blood and the amelioration of the patient's condition, such excretion being pro tanto *critical.* I shall now merely refer to the amount of "real urine" excreted, without reference to its composition.

[For this purpose Dr. Bird relates two cases of ague, in which the amount of solids excreted in the urine was ascertained at regular intervals during the treatment. It was found that their amount increased in the ratio of the improvement of the patients.]

I hope that I shall not be misunderstood in the line of argument I have adopted. Although believing most completely that ague is primarily excited by the influence of a peculiar septic poison derived from marsh malaria, I do not for a moment assert that this particular poison is excreted in the urine during the recovery of the patient. It is very probable that there are many intermediate links in the chain of causation between the incubation of the poison, and the development of phenomena accompanying convalescence. The great effect of the malarious poison is in all probability essentially and primarily exerted upon the nervous system, especially on the organic or ganglionic structure, which preside so importantly over the function of secretion. Thus, all the secretions elaborated in the body become affected; and, as is well known, a remarkable tendency to congestion is observed in the portal circulation, destined most particularly for the depuration of matters rich in carbon. There can be no doubt that the unhealthy secretions thus formed, become active agents in keeping up in the body the impression of the disease. One of the great elements of successful treatment must of necessity be the depuration of the blood, and thus by freeing the system from the depressing influence of a vitiated pabulum for its growth and nourishment, allowing the vital powers to throw off the influence of the poison which for a time protected them. The influence of small doses of mercury in the treatment of ague is well known; by a gentle but persistent appeal of this kind to the liver, the patient is immensely relieved, and his ultimate cure expedited. Cotemporaneously with this, the aspect generally becomes less sallow, a sufficient indication of the liver becoming active in depurating the blood of carbon. Then, under the influence of that very curious class of remedies, the anti-periodic tonics, the paroxysms become less, or quite vanish, whilst ample evidence is afforded of the kidneys performing the important duty of filtering from the blood highly nitrogenised substances, by the rapidly increasing amount of solids existing in the urine. *Medical Gazette, July* 28, 1848, *p.* 148.

[Having thus adduced evidence that sudden improvement has ocurred in patients concomitantly with the evolution of a large quantity of solids by the kidneys, Dr. Bird proceeds to consider the question whether we can at will, by therapeutic agents, produce this depurating effect, and by hastening, the metamorphosis of matter, aid the removal of a *materies morbi*, whether itself the exciting cause, or the effect of antecedent morbid action. He says, speaking of the kidneys,]

Although the merest tyro in physiology is aware that the organs in question separate from the blood about one and a half ounces of solids in twenty-four hours, yet every one is not equally cognizant of the fact that the amount of excreta bears a direct ratio to the quantity of mal-assimilated matter in the blood, either derived from the food directly, or indirectly under the influence of the leaven of the disease, as shown in the results of the analyses of urine excreted at different times of the day, as well as in different phases of disease. Let us now endeavour to give a practical turn to this question, and ask whether *a therapeutical indication of importance may not be drawn from it?* And here we touch upon facts known and recognized by our predecessors centuries ago, but forgotten by ourselves. Having admitted that certain diseases are excited, kept up, or aggravated by a poison, if you will—or in other words, by a noxious or lethal effete matter in the blood—*can we not hope to aid our patient by exciting its removal by stimulating the depurating function of the kidneys?* This indication was acted upon by the old physicians.

[Dr. Bird considers that one of the most important elements in the treatment of the old physicians, was the *water* of the potions employed, and which was given *not by table-spoonfuls, but by pints.* He observed,]

It may be said that it is true that if a patient takes a pint or two extra of water he will supposing that no organic lesion exists, excrete a large bulk of urine, from the necessity there exists for pumping off the excess of diluent partaken of. In this way a pint or two of water becomes a diuretic: this every one's experience will enable him to admit: but what is this, it may be asked, but the mere drawing off of excess of water—where is the proof of blood-depuration? This proof is found by collecting the urine, measuring it, and by means of the formula and table before explained, calculating the amount of its solid constituents. It will then be found that the excess of water does not escape alone, but there is really washed away with it a certain, although not very large quantity of solid debris. To Edmund Becquerel must be accorded the credit of this observation: and any one may satisfy himself of its accuracy by collecting all the urine he passes in twenty-four hours, and determinining the quantity of solids it contains; and repeating this process next day, while throwing into his system three or four bottles of aerated—the so-called soda-water. This observation affords a key to many of the undoubted cures effected by the use of many of the mineral springs.

A man labouring under some chronic ailment, which, perhaps, like old rheumatism, is the direct result of unhealthy constituents of the blood, starts for one of the Brunnens or Spas, and with fearful devotion swallows the enormous quantity of ten or fourteen beakers of the warm bubbling water. In a few minutes he begins to secrete abundance of urine, and is is engaged alternately drinking and micturating for part of the morning—active exercise, when possible, being enjoined the whole time. By this exercise the wear of tissue is increased, and the copious water-bibbing positively aids the metamorphosis of tissue, and washes its results from the body. An excellent and esteemed physician, the late Dr. J. Johnson, who paid great attention to this subject, informed me that he had been long accustomed to regard this active diuresis as an essential element in the patient's well-doing; and where it was not produced the patient was generally the worse for his visit. Hence he was in the habit of never sanctioning any of his patients making a pilgrimage to the Spas if any organic lesion existed capable of interfering with the function of the kidneys.

The same explanation may be given to the success which has attended some cases when submitted to the hydropathic quackery; the patient being actually cleaned out, the old and diseased tissues being literally washed away, to make room for new structures deposited under the cheering results of the hygienic influences of exercise, good air, and change of scene; and the cheerfulness of mind produced by the bright promises of the future too often delusively held out by the disciples of Preissintz.

When we are consulted by patients labouring under severe ailment attended with dark urine, pale alvine dejections, and a jaundice face—who hesitates for a moment making an appeal to his liver, and bringing into full play his battery of cholagogues—who, when consulted on a case in which the skin is hard and dry, the surface imperspirable, and as a result, perhaps, the mucous membrane congested, would demur to the practice of directing his attention to the deficient function, and of doing his best towards arousing the torpid duties of the skin?

Although all will admit the importance of an appeal to the functions of liver and skin, and are daily in the habit of stimulating these great filters when tardy in their offices, yet the depurating offices of the kidneys are forgotten. True, if a dropsical effusion accumulates—if a patient is threatened with falling a victim to waters of his own forming, the renal pumps are always looked to, and they are set to work, or rather expected to obey, the influence of stimulants, when, perhaps, in many cases a more philosophical and enlarged view of the etiology of the disease would have suggested the propriety of leaving them alone. But the filtering off of water is, as I have said, but one, and really a subordinate function, of the kidneys—one which it shares in common with the cutaneous and mucous surfaces.

If we are all ready to admit that an appeal to the liver is important in separating matters rich in carbon, hydrogen, and sulphur from the blood—are not the kidneys equally so in their special functions of separating matters rich in nitrogen? But we must not forget that we are thus taking a very narrow view of the great importance of the depurative functions of these great glands, for I have shown you that one, namely, the liver, separates from the blood the elements of glycocoll, a body representing the atomic composition of urea and sugar, the former in health, the latter in disease, being constituents of the urine. If we assume the computation as correct that an adult man secretes twenty ounces of bile in the twenty-four hours, this quantity will yield about 1000 grains of solids containing thirty-seven grains of nitrogen, representing, if half this quantity can be obtained as glycocoll, forty grains of urea, or about one-eighth of that secreted by the kidneys in the same time. The kidneys not only, too, you will recollect separate nitrogenised, but a considerable quantity of carbonised matter, and hence perform a depurative function analogous to, although less effective than, that of the liver, so far as elimination of carbon and sulphur are concerned. Hence there is a still more important view to take of the kidneys, in their being able to compensate, to a most remarkable extent, for the deficient functions of other emunctories. This, indeed, is a duty these organs can perform readily, because I presume it is less in violation of their normal and definite functions than is the case with any other gland. Thus the liver excreting normally but thirty-seven grains of nitrogen, could hardly be expected to secern any considerable proportion of this matter from the blood—not so the kidneys, for these organs, as we have learned, always excrete, besides the nitrogenised bodies, urea, uric acid, creatine and creatinine, a pigment (the uroxanthin), nearly as rich in carbon as the bile itself, to which it bears no small analogy, and a peculiar extractive allied to cystine, although not yet isolated, but containing much sulphur, and thus in another important point approaching the hepatic secreta. But, dismissing theory, look to bed-side observation: observe any case in which the hepatic functions are deficient, and we see the urine assuming a compensatory, although, of course, not quite a complementary function, from the kidneys depurating the blood of carbon in the form of an increased quantity of its peculiar pigments—a body containing fifty-nine per cent. of carbon, and as a proof, the addition of a few drops of hydrochloric acid to the warmed fluid, develops a magnificent crimson or purple hue, instead of the pale lilac of healthy urine thus treated. Let, however, the liver remain inactive, no matter whether from disordered function or lesion of structure, still the industrious kidneys labour on, and the chamber-pot is now observed by the patient to present a delicate high-water mark of an exquisite lake-colour. Soon this matter increases, and deposits of varying shades of crimson and purple occur. What is this purple deposit? what its function and origin? It consists of the ordinary urate of ammonia, mixed with the body once suspected to be murexid or purpurate of ammonia, but with which it has not the most remote analogy, save in colour. This *purpurine*, as I ventured to name it when I first suggested its then probable and now ascertained function, is, as I hinted to you last week, but a slightly metamorphic form of an element of the bile, and contains no less than sixty-three per cent. of carbon. Let, however, the disease assume another phase, let the excretion of bile by the liver become arrested, the varying shades of yellow of the surface attesting its presence in the blood: *then*, not by assuming any new function, but in accordance with the law announced by Wohler, of removing all soluble noxious matters, the kidneys secern and excrete the matter in health proper to the liver, and the contents of the bladder become nearly as bilious as urinous. The picture I have sketched is a familiar one; and of every day occurrence as it is, can we not deduce from it a useful lesson; in learning (and, what will be better) acting upon the important fact, that the kidneys can depurate the blood, not only of matters generally regarded as proper to their function, but of substances which it is the normal duty of other emunctories to separate from the animal organism.

Is it not wise then, to take a more enlarged view of the class of alterative or resolvent remedies than we now do? We scarcely use one of this class, without intending it as more or less to influence the liver. Hence an alterative and mercurial are in common parlance nearly convertible terms. These powerful remedies, however, acting as they do in general on the capillary functions, are capable of influencing all the glands, and hence, however intended, and with whatever view prescribed, they often effect good by exerting a less special influence than was intended by the physician: and as I confess myself to be an utter sceptic to the generally received and popular notion of the *specific* action of mecury on the liver, this important and most ancipital remedy exerts a marvellous influence over that great laboratory of the system, the capillary circulation, and wherever the capillary structure most abounds, there its effects are most prominently developed. Mercury is then a stimulent to the function of the liver only inasmuch as this great organ contains an enormous mesh-work of capillaries: it influences equally in proportion to their bulk all the other organs in which this curious vascular structure exists. A dose of mercury, then, when administered, acts on all the organs in which capillaries abound, and the liver being one of these is influenced by it, but not more in proportion to their development than the kidneys or salivary glands. After what has been said, I think I need hardly point out the *therapeutic indication* I am anxious to advocate.

I would press upon the practitioner the importance of directing his attention to diuretics, not as merely helping the pumping off of water, but as *renal alteratives*—as remedies aiding the removal from the body of injurious matters. I am aware that this indication is often unintentionally fulfilled, whenever alkalies or salts of vegetable acids are given, but still at the present time these and other analogous remedies are not administered with the confidence they deserve.

I am anxious to announce to you a new fact, one which bids fair to be of great importance in the treatment of disease, and one which I believe has never yet been announced, and which the examination of the urine secreted under the influence of remedies has led me to discover. It is, that we possess remedies which when administered remarkably increase the metamorphosis of tissue, and enable us to produce at will the very depurative effects, which I have pointed out to you as resulting normally in the course of certain zymotic diseases. In taking a practical view of the so-called diuretic agents, it will now become necessary to divide these into two classes: the one including those which simply increase the bulk of the urine; the other, those which act as *renal alteratives*, and aid the depuration of the blood.

To the former class belong all those agents which out of the body exert no chemical effect on animal matter, as all the vegetables diuretics—squill, copaiba, broom, juniper guaiac, digitalis, &c. All these, in the absence of any opposing cause connected with mechanical obstructions to the free course of the circulation, will, it is well known, increase the discharge of fluid by the kidneys, and become often valuable agents in enabling us to successfully treat dropsical accumulations. Hitherto no distinction has been drawn between these agents and those which exert a chemical influence on organic matter: and hence two sets of agents exerting most different physiological effects were confounded. If the urine secreted under the influence of the diuretics I have enumerated, be examined, the quantity of solids will never be found to much exceed the normal quantity; nay, sometimes they will even be in smaller quantity than in health, in consequence of their in some instances acting as irritants to the kidneys, and by producing congestion, interfere with active secretion.

Remedies, then, which exert no chemical action on organic matter out of the body, appear to be incapable of augmenting the quantity of solids in the urine, and hence are only of use in increasing the elimination of water; they may, and do act as renal hydragogues, but not as renal depurants.

We have next to notice those remedies among the reputed diuretics which exert the influence I have alluded to, and according to my own observation, increase the metamorphoses of tissue, and act as depurating agents: this class includes the alkalies, their carbonates and their salts, with such acids as in the animal economy are capable of being converted into carbonic acid, including the acetates, tartrates, citrates of soda and potass. These remedies all act alike, they all actively stimulate the excreting function of the kidneys, and increase the bulk of the urine: but they do more, they actually increase the metamorphoses of tissue by, in all probability, a direct chemical action on the elements of worn-out and exhausted tissues, or other matter in the capillary laboratory of the body. It is well known that alkalies and their carbonates powerfully dissolve albumen out of the body, and even break it up into various secondary bodies: thus, digested with an alkali, albumen yields leucine, protid, and erythro-protid, bodies allied to gelatine, formic acid, and other compounds. In like manner casein is broken up into tyrocin, leucine, valerianic acid, and other elements. From such change occurring in the body, and in the living body, and in the living organism itself, we find the chemical diuretics easily effecting important changes. This I have repeatedly confirmed by absolute experiment. I will adduce but one, as it may be taken as an example of the rest. A young lady is now, and has been for some time under my care, labouring, among other things, under a condition of the orifice of the urethra which prevents her passing water without the aid of a catheter, so as to admit of a very accurate examination of the quantity secreted in twenty-four hours. This, when no medicine was administered, was thus collected and examined; and then three drachms of acetate of potass being administered in the course of twenty-four hours, the urine secreted in that time was collected and analysed. The results are shewn in this table:—

	Without medicine	After ʒiij. pot. acet
Quantity of urine in twenty-four hours,	f℥xvj	f℥xlvj.
Specific gravity of,	1·025	1·017
Solids in	416 grs.	782 grs.
Uric acid	2·6	3·45
Urea	130·5	202·40
Soluble salts	72·0	248·40
Insoluble salts	21·6	32·20
Organic matters not included in the above	189·3	295·50
	416	782

The results of these analyses shew that, after deducting the excess in the amount of soluble salts arising from the conversion of acetate of potass into carbonate, the solids of the urine excreted under the influence of the chemical diuretic exceed those recovered without its aid by 190 grains: and we further learn, that although a large proportion of matter was metamorphosed into both uric acid and urea when the remedy was given, still that the greatest increase was in that mixture of organic products set down as extractive, and consisting chiefly of creatine, creatinine, uroxanthin, and matter rich in sulphur. In the example adduced, not only did the patient lose an excess of thirty ounces of water in twenty-four hours, but she *wasted* to the extent of one hundred and ninety grains more than if no remedy had been given, and to this extent had the blood been depurated of those elements which yielded easiest to the influence of alkaline salt. In these lectures I have advanced much which tends to limit the influence of the vital force, and have endeavoured to show that it is not the active agent in controlling metamorphic changes; but let me not be supposed for a moment to deny its influence.

I regard life as an active agent in controlling organization, and in exerting an influence opposed to chemical or destructive changes—in a word, as a *conservative agent*. Now, admitting that the elements of our frames resist chemical influence in the ratio of their vitality, it would follow that such constituents of our fibres as present the greatest departure from health are less highly vitalized, and thus yield the easiest to the chemical force exerted by the alkaline diuretics. On this account it is fair to presume that, when we cause an alkaline carbonate to circulate through the blood, it exerts an influence on the nascent elements of those matters less highly influenced by life, allied to that which they exert on dead matter, aids their resolution into substances allied to those produced out of the body, and actually causes the matter to assume so soluble a form as to allow of its ready excretion. This remarkable effect of the alkaline diuretics, although now for the first time demonstrated by actual experiment, and the results of their chemical influence detected in the stream by which they are washed from the body, was not overlooked by the observing physicians of other days.

I would earnestly beg those who are now doing me the honour of listening to my remarks, to give a careful and steady trial to the *depurating or chemical diuretics*, especially the salts of potass with vegetable acids, when they are called upon to treat a chronic affection in which the exciting cause or existing disease, depends upon the presence of some product of less vitality or imperfect organization. I fully believe that in many instances such matters will be often found to yield, whether they present themselves as albuminous deposits in glands, furuncular disease of cellular tissue, or incrustations on the skin, as in some of the squamous and tubercular cutaneous diseases. That they will succeed in increasing the waste of matter, is, from my observation, beyond all doubt; that the lowest vitalized matters will yield to the solvent the readiest is most probable, and that an important and powerful addition to our supply of therapeutic weapons is certain.

I will not dare to do more than state that it has occurred to me to see the periodicity of ague broken through, the paroxysms lessened and made more distant, and the sallow dirty aspect of malaria exchanged for the cleaner and brighter complexion of returning health, under the influence of the agents I am advocating. The disease has thus been rendered readily amenable to the subsequent administration of the anti-periodic whose previous influence it had resisted, or, at least, not satisfactorily obeyed. Jaundice, connected with a large sluggish congested liver, has certainly better yielded to setting up a complementary function on the part of the kidneys by a diuretic alterant, than by goading the liver with remedies whose influence it refused to obey; and in more than a single instance a strumously enlarged cervical gland has yielded to the persistent use of an analogous remedy even after resisting the iodide of potassium.

In corroboration, to some extent, of the views I have announced, I would particularly draw attention to the extraordinary discovery made by Dr. Letheby, and announced by him last year at the Royal Medico-Chirurgical Society. This gentleman discovered that arsenious acid, when administered to an animal, ceased, under the influence of an active diuretic to develope its poisonous effects, being rapidly carried off by the kidneys. The high and deserved reputation of Dr. Letheby invests this most unexpected and remarkable observation with authority, and, if corroborated by the experience of others, it must be regarded as one of the most marvellous facts connected with therapeutical inquiries.

I would impress upon those who will now act on my suggestion of employing alkaline acetates, tartrates, or citrates, as remedies for the depuration of the blood, or for aiding the solution of lowly organised or cacoplastic deposits, the necessity of testing the work done by the kidneys, by collecting the urine of twenty-four hours several times during the treatment; and then, by aid of the specific gravity, and the table I have given, the amount of excreted solids indicating so much metamorphosis of matter may be observed.

I have not alluded to the influence of benzoic and cinnamic acids as depurating remedies, because I have in an early lecture alluded to their mode of action. I may remark, however, that their efficacy is by no means limited to the quantity of carbon, hydrogen, nitrogen, and oxygen, they separate in the form of hippuric acid, as first pointed out by Mr. Ure, but I find that they induce an increased metamorphosis of tissue, and the quantity of matters included under the vague term of extractive, remarkably increases during the administration of benzoic acid. I may now be permitted to express the statements I advanced in this lecture in the form of five propositions:—

A. That a knowledge of the amount of solids escaping from the body in the urine will, independently even of their chemical composition, often enable us to detect a deficient function of the kidneys, although the bulk of the secretion may not be materially affected. This can only be ascertained by the plan now proposed.

B. That whilst *specific diuretics*, as a rule, only increase the exhalation of water from the renal capillaries, the alkaline salts, (*chemical or alterative diuretics*,) on the other hand, when coming in contact, in the *capillary circulation*, with the nascent elements of tissues or parts of low vitality, remarkably accelerate their metamorphosis and subsequent solution in the blood.

C. That in certain diseases attended by cacoplastic or even saline deposits, before despairing of all aid from medicines, it would be well to try to effect their removal by the agents in question.

D. That in the treatment of disease, the question ought often to be entertained whether ailment is not excited, kept up, or aggravated, by an unhealthy condition of the blood, either by the actual existence of a *materies morbi*, or the presence of the results of mal-assimilation.

E. That when one or other indications be made out, great benefit may be often derived by aiding the metamorphosis and solution of the morbid elements by the chemical diuretics (B), not administered with the view of separating mere water, but of aiding the excretion of solid elements of the urine. *Med. Gaz., Aug.* 11, 1848, *p.* 227.

[On this very interesting subject of "the depuration of the blood," we append some valuable remarks from a review of Dr. Williams' "Principles of Medicine" in the British and Foreign Medico-Chirurgical Review. The writer says:]

It has been too much the custom to regard the fæcal evacuations as little else than the indigestible residue of the food, mingled with portions of the biliary and pancreatic secretions; whereas we think that a little consideration serves to show that the peculiarly *fæcal* matter is a real excretion, which must have been eliminated from the blood by the glandulæ of the intestinal walls. The undigested residue of the food may form a greater or smaller proportion of the *bulk* of the evacuation, according to the nature of the ingesta and the completeness of the digestive process. When the alimentary canal is in an irritable state, and the aliment is hurried through it without time being allowed for the proper action of the gastric and other secretions, a considerable part of it may be recovered from the fæces in almost unchanged condition. It is well known that the coats of seeds and the skins of fruits resist the gastric solvent; so that, if they have not been mechanically ruptured, their contents will pass out unchanged, the seeds not being in the least the worse as regards germinating power, for having passed through the intestinal tube. It has been found that even starch-vesicles, if not ruptured by the masticating process, or by the heat employed (by cooking animals) in preparing the food, resist the digestive process so completely, as not to give up their contents, being readily detectible by the microscope in the fæces. Further, there is no evidence whatever, that the undigested residue of the food *could* acquire the fæcal character during the short period which suffices in the state of health for its transmission along the alimentary canal; and there is every reason to believe the contrary; since the substances which resist the action of the gastric solvent are precisely those which have least tendency to this kind of decomposition. Moreover, in purely carniverous animals, and in man, when he adopts the same diet, the food is *completely* soluble, and there is consequently no indigestible residue; yet fæces are still voided, though in smaller quantity than in herbivora. The case is still stronger in regard to sucking animals. The continued evacuation of fæcal matter when little or no food is taken in, the large quantity brought out by purgative medicines after the bowels have been completely emptied of their solid contents, and the colliquative diarrhœa which so frequently occcurs at the close of exhausting diseases, are so many obvious confirmations of the same view. To many of our readers it will doubtless be familiar; yet we are disposed to think that the idea of the intestinal glandulæ as performing a most important part in the depuration of the blood, by eliminating from it the *putrescent* results of the decomposition of the solids and fluids of the body, is not generally entertained with sufficient definiteness.

Dr. Williams has recognised the importance of some of the phenomena in question, and has put what we believe to be the true interpretation upon them. We find the following note in reference to the follicular enteritis of typhus in a later part of his volume:

"I have observed an extraordinary development and inflammation of the isolated and grouped glands of the intestines in the bodies of persons poisoned with arsenic. Their enlargement in epidemic cholera, and in the severe form of sporadic cholera, diarrhœa, and dysentery, caused by putrid effluvia, is well known. Are these glands excretory organs for the elimination of poisonous or noxious matters from the system? And in typhus fever do they become inflamed and ulcerated by the continued operation of the poison in the exercise of this function? The favorable influence of moderate diarrhœa in fever, the uncommon fetor of the stools, the general relation between the duration of the fever and the affection of these follicles, the salutary operation of these mild mercurial remedies which promote their secretion, and other facts that might be adduced, give so much countenance to this question as to make it worthy of attention."

"The preceding surmise, put forth in the first edition of this work, has received corroboration from numerous facts which I have subsequently observed; and it seems to me to indicate the true cause of the intestinal complication in fevers and other diseases induced by a morbid poison in the system."

The doctrine that the proper *fæcal* matter is not derived from the food, but is an excretion from the blood, has been recently advanced as new by Professor Liebig; but, strangely enough, he found himself at a loss for a glandular apparatus which he could regard as the special instrument of the function. He has added, however, one new fact of much interest; which indicates that the substance to which the fæces owe their peculiar fetor is due to the imperfect oxidation of albuminous compounds.

"If," he says, "we heat in a retort one part of white of egg and three of hydrate of potass, so as to melt the mixture, and continue the heat till the disengagement of ammonia has nearly ceased, and if we then supersaturate slightly the contents of the retort, after cooling, with dilute sulphuric acid, and distil, we obtain, along with a disengagement of carbonic acid and sulphuretted hydrogen, a liquid which is slightly acid, from the presence of acetic and butyric acids, and which has the most horrible fæcal smell. The substance to which the smell belongs is soluble in water and alcohol; it combines with alkalies, without, however neutralizing them. When exposed to the air, it is rapidly changed. By means of caseine, gelatine, and fibrine, when treated in the same way, we can procure all the different varieties of fæcal odour."

We look upon this question as one of great importance; since on the view we take of it much of our practice will depend. If it be true that the intestinal surface contains an extensive glandular apparatus, whose special function is the elimination of certain products of decomposition from the blood, the facility with which we can stimulate this to increased action, by certain kinds of purgative medicines, gives us a most valuable means of augmenting the depurative operation. We are no friends to the indiscriminate use of purgatives, which is the vice of many practitioners who pride themselves on their active treatment; but, on the other hand, we cannot regard them with the horror which some entertain. Seeing, as we think that no observant practitioner can avoid doing, how frequently Nature herself employs this means of eliminating morbific matter from the system—as is shown by the immense relief often given by a spontaneous attack of diarrhœa—we look upon this apparatus as one which, like the liver, the kidney, or the skin, may frequently with propriety be stimulated by medicines which have a special action upon it, and one through which many morbific matters may be eliminated more certainly and speedily than through any other channel. *Brit. and For. Medico-Chirur. Rev., July,* 1848, *p.* 136.

DISEASES OF THE NERVOUS SYSTEM.

16.—ON THE TYPES OF DISEASES OF THE SPINAL SYSTEM PRESENTED BY EXPERIMENTS.—By Dr. Marshall Hall, F.R.S., &c.

One of the great advantages of experimental researches in *the spinal system* is, that they frequently present types of its diseases; and the great advantage of these is, that they present the opportunity for the investigation of the nature of those diseases, and the deduction of their remedies. The diseases of the spinal system exist under several forms which admit generally of being reproduced in experiments for the purpose, and with the objects to which I have just adverted. In general the diseases of the spinal system occur under the form of *spasm*, of *paralysis*, or of the two combined —viz., *spasmo-paralysis*. They are all primarily affections of the excito-motor *muscular* system, to the exclusion of the *sentient* or cerebral system—a singular confirmation of a physiological doctrine, that these two systems are totally distinct from each other.

Generally, spasm consists in *irritation* of nervous tissue, still retaining its normal structure, whilst paralysis implies a *lesion* of that structure. But the structure of the nervous tissue must be viewed under several aspects: thus this tissue may be injured by being lacerated or bruised at any given point; but it may be strangely injured in a given point by injury inflicted at a distance, through the means of *shock*. In this manner spasm is apt to lead to paralysis, and for the obvious reason, that this peculiar lesion is of the most intimate or atomic character, unlike the division or separation of its atoms by laceration, &c., the paralysis, or spasmo-paralysis, so induced, is less persistent than in the latter case.

This remark leads me to the subject of the excito-motor power itself, on which all the movements connected with the spinal system depend. This power may be diminished or even suspended in its energies, it may also be greatly augmented, in which case there is proportionate augmented *susceptibility* to impressions, and to excited actions, the results of those impressions.

The former state of things is induced by all agents of such violent character as to induce shock; the latter is induced by peculiar agents, of a chemical or physical character, which act more gently on the nervous structures. The same identical agent may produce either of these effects, indeed, according to its degree. Thus, too large a dose of strychnine speedily destroys all excitability; a very minute dose, on the contrary, induces the most extraordinary phenomena of augmented excitability which we can witness. The action of the electric current is precisely similar: a very mild current produces purely physiological effects; too strong a current soon induces destruction of the excitability of this part of the nervous system. The first effect of decapitation (of shock) in a frog, is suspension of the excito-motor power; the second and ulterior effect is, or is supposed to be, an augmented susceptibility and activity of this vital agent. Electricity, heat, and the class of agents, called stimuli, generally—may be employed so as to act as augmentive or destructive of the excito-motor nervous power.

As an example of these effects, I may mention, for the benefit of those who have not performed an experiment, that immediately after decapitation of the frog, no reflex actions are produced on irritating the foot; it is diminished excitability, the effect of shock. On administering a minute dose of strychnine, on the contrary, the touch, even of a feather, induces reflex action of a tetanic force and character.

From *experiments* we learn that this augmented susceptibility or excitability may exist in *force* without existing in *action*. A frog may be under the influence of strychnine, yet, if not actually *excited*, it may remain quiescent, relaxed in posture: it is tetan*ode*, without being tetanic, affording a *type* and idea of certain diseases of the spinal system, of the deepest interest—one on which the *rationale* of the symptoms, and the adaptation of remedies, alike and equally depend.

Now, in this point of view, the effect of strychnine on the frog presents the TYPE of hydrophobia. In both the *blood* is poisoned,—in both the spinal system is in a condition of extremely augmented *excitability*, without being necessarily *excited*. Avoid all excitation, and the frog recovers. Apply excitation of the mildest character continuously, and the frog speedily dies. Here an experiment accurately presents, not only the *type* of the malady, but of the treatment.

In this experiment, as in hydrophobia itself, we have two conditions—one of *excitability*, the other of *actual excitement*, according as excitation is averted or admitted. I propose to designate the former condition by the termination *ode*, the latter by that of *ic*. The frog, unexcited, is still tetan*ode*; excited, it becomes tetan*ic*. The patient affected with hydrophobia is hydrophob*ode*; is he necessarily hydrophob*ic*? The former state admits of recovery; the latter soon destroys.

In this point of view we may consider other diseases of the spinal system. The patient affected with tetanus is not necessarily tetan*ic*; he is only tetan*ode*. If excited, he dies. What if he were, or could be, preserved absolutely from all excitement? He dies of violent and exhausting spasms. These spasms are *reflex* actions; reflex actions are necessarily *excited*. Remove all excitation, and the spasms—that is, the cause of death—would be averted.

In like manner the newly-decapitated snake is *full* of excitor and motor power, yet free from movement, unless an excitant be applied. So also of certain forms of convulsive disease in infants and in adults. The patients are spasmat*ode*, or spasmatic, according as they are excited or preserved from excitement. The difference throughout is that of the *disposition* to, or actual *condition* of, spasmodic action, or that of *excitability* and *excitement*. The former may subside: the latter destroys!

The further difference between hydrophobia and tetanus is, that the former is induced through the medium of the blood; the latter through that of an incident nerve. Of the former the frog affected with strychnine presents the exact TYPE; of the latter I doubt whether we possess an EXACT type in any experiment. No experiment has been devised, to my knowledge, to induce augmented excitability of the spinal system through the medium of an incident nerve or nerves, or of any part of the spinal system. It is said that the decapitated batrachian is more excitable than the entire animal. But I think this a mistake. The effects of excitation are controlled by efforts of violition in the perfect animal, and uncontrolled in the decapitated animal. The difference is rather apparent than real.

Thus of traumatic tetanus, I believe I may affirm that we have not yet an experimental type. This is to be regretted the more because many questions arise which can only be speedily determined by means of experiment. For example, do the spasms perfectly relax during the course of the disease? The trismus seems persistent—is it so? Or does it cease and return on any excitement from volition, emotion, or excitation of reflex action? Does an act of volition, exclusive of emotion and of reflex action, pass into spasm? As in the stammerer, the attempt to speak passes into excited action; so in trismus, the attempt to open the mouth closes the jaws more firmly. Volition passes into excited action.

I fear that in extreme cases the acts of respiration and of deglutition may pass into general spasm; so that to avoid *all* morbid action and its consequences may be impossible. Still the *type* of the disease in its augmented excitability, and the *principle* to guide us in the treatment—that of avoiding all excitation—are set before us in an experiment; and though the spasm *may* never cease absolutely, it will not be the less essential to avoid all causes of its exasperation.

It is to be observed, too, that in *all* experiments on the batrachian tribes, it is only types and principles which is presented to us, and on which our office is to reason correctly, and perhaps to experiment in our turn. It was an experiment on the *frog* which suggested to me the only *hopeful* way of treating *hydrophobia* and *tetanus!* In dentition there is a state of augmented excitability and actual excitement, arising, as in tetanus, from injury done to a nerve. I have not, as I have already said, seen augmented excitability in any experiment consisting of injury inflicted on nervous tissue.

I now come to a new series of *types* of disease of the spinal system. They consist in actual excitement of its different parts. the incident nerves, the spinal centre, and the muscular nerves, portrayed in a series of experiments on electrogenic states of these living tissues, laid before the Royal Society, but not understood by those who pretended to judge them there. The electrogenic state is that induced in a nervous structure by the continuous passage of a current of galvanism, of a force in due physiological relation to the excitability of the animal. Its phenomena are observed on withdrawing this agency.

The effect of this electrogenic state on the incident nerves is seen in varied reflex actions. The experiment is a *type* of those convulsive maladies which consist in excited reflex actions, such as are seen in dental, gastric, intestinal, and uterine irritation. The electrogenic condition of the spinal marrow itself is the *type* of the class of certain convulsive affections which arise from arachnitis at the base of the brain, spinal arachnitis, &c.

Lastly, the electrogenic condition of the muscular nerves is the *type* of those cases of spasmodic affection arising from neuritis, or of inflammation of the neurilemma. Such a state of things exists in the second or convalescent stage of facial paralysis. The tumefaction of the neurilemma having subsided, the neurine is irritated instead of being compressed, and spasm is the consequence. In the experiment of the electrogenic condition of a muscular nerve, the frequent discharge of the electrogenic state produces a similar effect on the nervi-muscular fibre.

There is still another class of TYPES of diseases of the nervous system displayed in our experiments. The cerebrum and cerebellum being removed in a dog, extraordinary reflex actions are induced by irritating the dura mater at various points. Having removed the head and sternum in a turtle, various reflex movements are produced by tearing away the viscera. It is obvious that irritation of the internal membranes and tissues may thus be a source of reflex convulsive maladies; that of the cerebral membranes induces various convulsive or tetanoid affections; so does irritation of the serous membranes within the thorax and abdomen—especially that of the pericardium.

It is but a step from these affections to those dependent on dorsal, gastric, intestinal, and uterine irritation, with which we are so familiar. It is but a step further to consider the remarkable effects occasionally attendant on passing a bougie or catheter, on irritating the meatus externus of the ear, on the passing of a biliary or renal calculus, &c. One patient experiences a sort of rigor, and an irrepressible deep inspiration on voiding the bladder, when that act has been too long delayed. Experiments might imitate some of these morbid phenomena.

I will conclude these observations by adverting to a question full of the deepest interest. A certain class of intracranial diseases—seated, I believe, at the base, and adjacent to the medulla oblongata—is attended with protracted sickness and vomiting; tetanoid, or epileptoid spasm; perhaps priapism and sexual excitement. What is the *precise* part, or organ, irritated in such cases? Experiment alone can teach us. I propose to place animals—dogs, for example—under the influence of chloroform, and to perform a series of experiments, to determine these and other important questions, replete as they would be with diagnostic, and, consequently, with practical suggestions.

It is in this manner only that *irritation* of the cerebrum, of the cerebellum, of the medulla oblongata, of certain nerves within the cranium, as the nerves of special sense, the trifacial, the facial, &c., the several membranes and their subdivisions, can be accurately and distinctly ascertained. When so ascertained, their application, as *types*, to the diagnosis of diseases, will be as obvious as it is important.

One such experiment I performed long ago. My aversion to the infliction of pain prevented me from ever repeating it, valuable as its results appeared. The discovery of the anæsthetic effects of ether, or of chloroform, will shed a benefit upon experimental physiology. There is another experiment of great interest. In endeavouring to procure the circulation in the web of the frog independently of the spinal marrow, I always found that the most careful destruction of the medulla oblongata was attended by its annihilation. This organ exerts, therefore, extreme influence on the action of the heart. It is on this account that a state of pallor, so like that of syncope, occurs in many attacks of the apoplectic and epileptic character, in sea-sickness, in other forms of sickness, &c.

All this is a part of scientific medicine and surgery. I believe it was an early career of experiment which made our greatest surgeon what he is. He sees symptoms by the light of physiology, and understands them! How apt and how beautiful, and how peculiarly his own, were his illustrations of surgical disease, on all occasions, from the chair of the Royal Medical and Chirurgical Society! *Lancet, Aug.* 19, 1848, *p.* 204.

17.—OBSERVATIONS ON PARALYSIS.—By Dr. R. B. Todd, F.R.S., Physician to King's College Hospital, &c.

[Dr. Todd relates the history of a case of paralysis arising from disease of the brain, and states that the points upon which the diagnosis was grounded, were the existence of pain in the head, the occurrence of paralysis on the opposite side to the pain, the irregular movements of the eyeballs, and double vision. He proceeds to say:]

The existence of fixed pain in the head in general indicates intra-cranial irritation. Pain in the head may be situate in the course of some of the nerves of the scalp, over the brow, or across the forehead, or in the temple, or spreading upon the parietal bone, or at the vertex. Pain in these situations is apt to shift, or intermit, or sometimes it gives the sensation of a nail being driven into the head—*the clavus hystericus.* When pain exhibits such characters as these, it is not indicative of any mischief going on within the skull, but rather is symptomatic of deranged digestion, or of some constitutional disturbance, or of a hysterical or hypochondriac state, or it is the result of debility or exhaustion; but where the pain is fixed in its situation, as in this case, and varies only in intensity, and not in locality, it can only be referred to intra-cranial irritation, such as probably would arise from disease of the membranes, or of some superficial parts of the brain. Disease of the corpus striatum, or of the optic thalamus, does not generally produce pain which is distinctly referrible to a particular spot. When disease of these parts occurs, it either causes no pain at all, or a dull heavy pain, which the patient cannot localise; unless, indeed, the pia mater in connection with them be extensively diseased. If the dura mater, or the arachnoid, or the pia mater, become the seat of disease, then pain is produced, and the patient refers it to a point which very nearly corresponds to the site of the morbid lesion: hence such pain as our patient suffers may be looked upon as indicating rather a superficial than a deep-seated lesion.

Another important symptom under which this man laboured was dimness of vision, which also assumed the form of double vision. This symptom, although it often occurs independently of cerebral lesion, ought, nevertheless, to excite the suspicion of such lesion, and more especially if there be at the same time any affection of the muscles of the eyeball.

The paralysis in this case is of that kind which generally depends on cerebral lesion, its one-sided character denoting a cerebral rather than a spinal origin: at the same time you must bear in mind, that a similar form of paralysis may take place, as the result of hysteria, where there is no appreciable lesion at all. In this case it is plain that the paralysis is not of the hysterical kind, because the face is affected, and also because the mode of moving the leg is essentially different from that of the hysterical palsy; the patient is also of the male sex, which is very much less liable to these hysterical affections.

The parts of the brain, the lesion of which is most apt to produce hemiplegia, are the corpus striatum and the optic thalamus, and the most frequent lesions of them are softening, a clot, or abscess. It is remarkable that lesion of the optic thalamus should produce nearly, or precisely, the same effects as lesion of the corpus striatum. This is probably explained by the intimate union of the two bodies so that neither can be affected without the other participating in the morbid iufluence; but if the optic thalamus be the part diseased, the corpus striatum will suffer more in consequence than the optic thalamus would if the corpus striatum were the seat of lesion, because of the great size and extensive connections of the optic thalamus, and the smaller size and more limited connections of the corpus striatum. Disease also in the immediate vicinity of these parts will cause paralysis; but if the lesion be situated quite near the surface of either hemisphere of the brain, and be not of such a nature as to produce pressure, there will be no paralysis.

A clot, or an abscess, or a tumor, in the centre of the centrum ovale, will not produce paralysis if it do not cause pressure, or interfere materially with any of the fibres of the corpus striatum. Another condition capable of producing hemiplegia is inflammatory or other disease of the membranes. The dura mater cannot suffer long from inflammatory disease without implicating the arachnoid or pia mater. When you get inflammation of these membranes, you have effusion of lymph, or of pus, which, as it increases, causes pressure on the surface of the brain, which is then extended to the corpus striatum and optic thalamus, and thence results the paralysis.

If some of the deeper-seated parts, such as the crura cerebri, are affected, we also have paralysis; because the crura cerebri, as the bond of union between the corpora striata and spinal cord, form a part of the great centre of volition. Disease of the cerebellum or its crura, provided it be deep-seated, will also produce hemiplegia; this is probably due to the connection which is formed between the hemispheres of the cerebellum and the fibres of the pyramids in the pons Varolii.

You will meet, in practice, four different conditions of the muscles in paralytic limbs in different cases. The first differs scarcely at all from that of the healthy muscles; the muscles exhibit, perhaps, less firmness, and are less excitable by the galvanic stmulus, when the paralysing lesion is not of an irritative kind. A second condition presents complete relaxation of the muscles: they are soft, imperfectly nourished, and waste with wonderful rapidity; so that under a paralysis of a few days' duration the size of the limb experiences a very marked diminution. In these muscles there is very little excitability to the galvanic stimulus—sometimes almost none.

This is the most complete condition of paralysis, in the strict sense of that term, and it is sometimes accompanied with phenomena which denote a depressed state of the general nutrition of the limb: the pulse in the large arteries of that side is weaker; there is sometimes more or less of œdema, especially if the limb be kept in a dependent position; and the heat of the limb is imperfectly maintained. Some of these cases get well; others con tinue paralysed, although the general health of the patient improves, and the muscles become wasted to mere membranes; others, again, continue paralysed, but the muscles gradually assume a condition, the third condition to which I wish to call your attention—one of contraction and rigidity, the flexor muscles always exhibiting this state to a greater degree than the extensors. The muscles are still wasted, but they are stretched like tense cords between their origins and insertions. The biceps in the arm, and the hamstring muscles in the thigh, project beneath the skin like tense membranes. This condition is due to a chronic shortening of the muscles themselves: they are tense, but not firm nor plump; it is undoubtedly a form of muscular atrophy, and is accompanied with feebleness of circulation and coldness of the limb. A fourth condition is illustrated by our present case. The muscles suffer very little, or not at all, in their nutrition; the paralysis is seldom complete; and the muscles are either constantly firm and rigid, or become so on the slightest movement of the limb. In these cases there is more or less of an exaltation of nutrition,—the circulation in the limb is vigorous, and its heat is not below the standard of the other limb: and it is frequently more excitable by galvanism than the corresponding muscles on the other side.

I must beg particular attention to these various states in which the muscles of paralytic limbs are found. You may draw practical inferences from them of great value in treatment: when the early condition of rigidity is present your patient will bear local bleeding or local counter-irritation, or both, with advantage; and will derive benefit from them, provided other symptoms do not contraindicate them. The state of complete relaxation affords no indication for the use of antiphlogistic measures, but on the contrary, in many of the cases in which it occurs it should be regarded as affording a contrary indication. As to that condition in which the muscles assume the contracted state gradually, and some time after the paralytic seizure, I wish much it were in my power to suggest some means of arresting it. Some slight benefit is gained by subjecting the limb to frequent extension at stated periods in the day: this I believe will retard the contraction, so long as it is diligently persisted in; but when it has been laid aside the contraction will go on just as if the extension had never been employed. The case is analogous to that of stricture in the urethra, or the cicatrix after a burn, which exhibit a remarkable tendency to contract, requiring in the former case the long continued use of the bougie, and in many instances its frequent employment throughout the entire life of the patient. In both instances, indeed, I believe I am correct in saying that surgeons have hitherto failed in finding any means to check effectually the tendency to contraction.

I may add that long-continued and forcible extension of the limb gives rise to considerable pain when the muscles are in the state of chronic contraction—pain so severe that the patient cannot bear the extension for any length of time.

[Dr. Todd then makes some observations on the influence of electricity on paralysed limbs. He says,]

I may first, however, call to your recollection the doctrine of Dr. Marshall Hall, that, when the influence of the brain upon a limb has been withdrawn, the irritability of the muscles of that limb becomes considerably augmented, and that, therefore, in hemiplegic paralysis, the muscles of the paralysed limb are more excitable by the galvanic stimulus, than those of the sound limb. The results of my experiments have led me to a somewhat different conclusion from that of Dr. Hall; and I would refer you to an account of these experiments published in the last volume of the Medico-Chirurgical Transactions.

My experiments led me to arrange cases of hemiplegic paralysis into three classes, according to the manner in which the electrical stimulus affects the paralytic limbs. In the *first* class, to which belongs the vast majority of the cases, the paralytic limb was acted upon by electricity very slightly or not at all, and in every instance to a less degree than the sound limb. In the *second* class of cases, no perceptible difference existed as to the effects of electricity on the two limbs: these were cases of recent paralysis, the cause of which was not of a depressing nature. In the *third* class, the electricity produced a greater effect on the paralysed limb than on the sound limb; the difference, however, was never very great, and such cases are not numerous: in all of them the paralysis was accompanied by recent rigidity of the muscles.

Now, of the two cases which we have been describing, we found that in the man, Hardwick, electricity produced more effect on the paralysed limbs than on the sound limbs; and in this case you will recollect there is muscular rigidity. After the patient had been some time in the hospital, the paralysis became more complete, and the muscles less rigid, and, in the same proportion, their excitability to the galvanic stimulus also diminished.

In the second case—the woman, Williams, electricity produced scarcely any contractions in the paralysed limbs, whilst it caused distinct but somewhat feeble contractions in the sound ones; and you will remember that we applied electricity in this case, not only by the electro-magnetic machine, but also by the simple galvanic trough, making use of a small trough, consisting of a few pairs of plates, and also a large trough consisting of a hundred pairs of plates; and whether we employed the frequently interrupted current, as in the electro-magnetic machine, or the continuous current of the galvanic trough, the same results were obtained.

The conclusions to which I have arrived upon this subject are, that when the paralysed limbs exhibit an early spastic or rigid state of the muscles, as in the case of Hardwick, they will be more excitable by electricity than the sound limbs; but if the paralysis be accompanied by a state of complete resolution of the muscles, the sound limb is most excitable to the galvanic stimulus, and the paralysed limb is scarcely at all to be excited: in the latter case the nerves of the paralytic limb are in a depressed condition: in the former they are in an irritated condition; and the different effects of electricity in the two cases will depend on the difference of cause of the paralysis; if the paralysing lesion be irritative, the paralytic limb will be more excitable by the galvanic stimulus; if, on the other hand, it be depressing, the paralytic limb will be less excitable; and thus this difference in the effect of electricity on the two limbs, may serve to guide us in our diagnosis, and we may conclude that the lesion is irritative or depressing, according as the paralytic limb is more or less excitable by the galvanic stimulus.

Medical Gazette, August 4, 1848, *p.* 184.

18.—ON PARALYSIS OF THE PORTIO DURA.—By Dr. R. B. Todd, Physician to King's College Hospital, &c.

[As facial paralysis, Dr. Todd observes, is to a patient and his friends a very alarming disease, it is important for the practitioner to be well acquainted with the various kinds of palsy affecting the face, so that a favourable prognosis, when the case will admit of it, may at once be given. The case which formed the subject of the following observations by Dr. Todd, was one of paralysis of the facial portion of the seventh pair of nerves, accompanied by severe pain behind the right ear. Dr. Todd observes:]

The leading character of these cases of facial palsy is the inability to close the eyelids, from paralysis of the *orbicularis palpebrarum* muscle: this is the pathognomonic sign which determines the peculiar nature of the palsy, and distinguishes it from the more serious form of facial palsy which is dependent on disease of the brain and palsy of the fifth nerve. It is remarkable how seldom the seventh pair of nerves is affected by disease of the brain. I cannot say that I ever saw a single instance of paralysis of the orbicular muscle of the eyelids due distinctly to diseased brain; and I have only seen a few in which the power of the muscle appeared to be enfeebled from that cause. Thus we have a point favourable and consolatory to a patient affected with *portio dura* paralysis; namely, that the affection being seated in that nerve affords a strong probability that he is free from disease of the brain; for diseased brain would give rise to a different form of facial palsy, and very rarely, if ever, cause this.

You have only to examine this patient with care, and you will find that he has almost every sign which indicates that the paralysis has its seat in the portio dura nerve. He cannot close his right eyelids; in making the attempt, however, he seems not to have lost the power altogether, for the upper lid is slightly depressed; yet if you put your finger on the orbicular muscle you do not find the slightest contraction of it.

How, then, is this slight depression of the upper lid produced? Watch him closely while he shuts the left eye and attempts to do the same with the right, and you will perceive that at the moment the left eye is closed, the right eyeball turns upwards and inwards to such an extent that the cornea is nearly or wholly concealed by the upper lid, and by this upward movement of the ball the upper lid is slightly depressed. The same upward movement of the eyeball takes place on the sound side at the moment of the forcible contraction of the orbicular muscle. It is a very curious instance of an involuntary movement which cannot be controlled, accompanying a forcible action of another kind: and no doubt has reference to the complete protection of the eyeball against all those sources of injury which would occasion the forcible closure of the eyelids.

Our patient is unable to frown on the right side, while he does so distinctly on the left; neither can he move his scalp on the right side; the corrugator supercilii, and the frontal portion of the occipito-frontalis muscles, are paralysed—and hence these movements cannot be effected. The levatores alæ nasi. and the zygomatic muscles, are likewise paralysed on the right side, and therefore, the right nostril is motionless, and the angle of the mouth hangs on that side. The orbicularis oris muscle is paralysed as to its right half; the patient is consequently unable to purse up his mouth, and if you ask him to whistle, he will afford you indications of his inability to perform this as well as other actions. In making the attempt to whistle, you may peceive that he contracts the orbicular muscle of the mouth on the left, but not at all on the right, and so he is quite unable to get his lip into the position necessary for the production of sound; and while trying to adapt his mouth for this purpose, he smiles or laughs, as is often the case when you ask a person to whistle, and you are thus enabled to see how completely the action of the features is confined to the left side. The act of smiling or laughing is exaggerated on the left side, and the reason is because the left muscles have lost completely the resistance of those of the right side, which remain perfectly motionless, and which from disease have lost their tone, and have suffered much in their nutrition. For the same reason all the movements of the features which act in symmetry, and which at the same time counterbalance each other, are found to take place to an exaggerated extent on the healthy side. Hence in smiling, laughing, and speaking, the face is drawn more or less to the right side: the distortion takes place on the healthy side, the paralysed side remaining unmoved. The popular notion, in cases of this kind, is that the disease is on the side to which the mouth is drawn. No medical man, however, can fall into this mistake if he be at all acquainted with the real condition of the patient.

Another muscle which is paralysed in this case, and in all cases of the same kind, is the buccinator. Hence the cheek hangs loose, and as the patient speaks, it flaps to and fro. This extreme looseness of the cheek is not an early symptom of this form of paralysis; it manifests itself more and more, the longer the duration of the disease, and ultimately becomes the cause of symptoms very troublesome to the patient. It interferes not only with articulation, from its looseness and flapping movements while the patient is speaking, but mastication likewise. The palsied muscle allows the food to accumulate between the teeth and the jaw, and fails in its functions of supplying the mill with its proper amount of material to be ground. After a little time, patients learn to remedy the defect of articulation which the paralytic condition of the buccinator muscle causes, by supporting the cheek with the hand; and a similar kind of support serves to remove the inconveniences of mastication.

You will observe that all the muscles paralysed in this affection are *superficial:* they are all muscles more or less concerned in the expression of the countenance. The deep-seated muscles are not affected—these are muscles of mastication—the only muscle paralysed, which is concerned in mastication, being the buccinator, which is, however, only accessory to that function, and is as much or more a muscle of expression.

[As the buccinator receives a motor branch from the fifth, in addition to its supply from the seventh, the circumstance of its being paralysed, when the disease or disorder is confined to the seventh pair, is very curious, and has not as yet, Dr. Todd remarks, received an adequate explanation. As to the treatment of this affection, much treatment is not generally required when it has arisen from cold or from constitutional causes; mild purgatives, alkalies or sudorifics, or iodide of potassium, and locally warm fomentations. Leeching or blistering are not so distinctly useful; and strychnine, Dr. Todd remarks, *is of no use* in these cases. If recent otitis be the cause of the attack, more antiphlogistic treatment will be needed, and sometimes even salivation will be beneficial.] *Medical Gazette, Sep.* 22, 1848, *p.* 479.

19.—ON THE ATROPHY OF PARALYSED MUSCLES.—By W. F. Barlow, Esq.

[In Part XVI, of the Retrospect, p. 108, will be found an article by Mr. Paget, on the atrophy of paralysed muscles. The following observations on the same subject will be read with interest:]

There is no law in physiology better known than that of the existence of the nicest possible relation between the action and the nutrition of muscles; and everybody knows that *protracted* rest is a cause of their atrophy; exercise of their nourishment; over action of their hypertrophy. And this law is one form of the expression of the truth, that life must, to be perfect and fulfil all that it can accomplish, be a busy and energetic life. Dr. John Reid has shown how a frog's muscles may be nourished by galvanism, notwithstanding their being cut off from the nervous centres.

I have seen cases of paralysis (as others must have done) wherein the nutrient operation of this powerful agent was extremely marked. This operation, considered by *itself*, would suffice to make galvanism of the greatest value in the treatment of paralysis; but galvanism has been too much used for what it cannot, too little for what it *can*, accomplish. It is, in general, the best of all the modes of producing involuntary action; it is the most sure, the most manageable, and by far the most widely applicable, since it acts where no motions can be exerted otherwise. It was this reflection that led me to suggest that it should be used for the express purpose of preventing atrophy; and I think the reader will be inclined to agree in what Mr. Bowman has said of its power to do so. But where and how far it can be made available in this respect is, strange to say, a matter still in need of close inquiry.

It is *use, not the manner of it*, which nourishes a muscle. Emotion may, clearly, subserve nutrition; and I have lately seen a case of long-enduring paralysis, in which the paralytic muscles were evidently nourished to some extent through being frequently contracted therewith. Nor is it absurd to suppose that the aimless movements of paralysis agitans may, in *some* severe cases of the affection (*literally* cases of paralysis with agitation) aid considerably in checking atrophy.

As a rule, the degree of atrophy in paralysis is in the ratio of its completeness; but the most complete *cerebral* paralysis which can occur, may not be attended by any loss of nourishment, because of the frequently occurring motions, of one kind or other, which are dependent on the spinal marrow. Again, injuries of the cord which are attended by a paralysis in which spasms occur, or reflex actions can be excited, do not cause the same wasting of parts as those accidents which effectually exclude the muscles from the influence of the nervous centres. Dr. Marshall Hall has shown that irritability may be a test of *cerebral* paralysis, as distinguished from *spinal*, and I have had the opportunity of seeing him employ it. The state of the nutrition of the muscles may, as it seems to me, also help our diagnosis. For instance, if in a case of very long-standing and complete paralysis, the muscles be not lax and flabby, but, on the contrary, well nourished, and this in the absence of any measures having been taken to excite them to motion—we may infer that some involuntary action must have occurred from time to time to prevent their atrophy, and if so, the paralysis is *cerebral* only. But on the other hand, muscles may greatly waste, and yet be connected with the cord, so that atrophy is of course no proof of paralysis being *spinal*. An atrophied and paralytic muscle may be more susceptible of the galvanic current than its healthy fellow, as Dr. Hall has shown. But the most favourable condition of all for excess of irritability is, I think, that in which the muscles are excluded from cerebral influence, yet still connected with the spinal cord, and have enough of motion to nourish, too little to exhaust them.

Not only may recovery from paralysis be rendered needlessly slow and tiresome, by allowing muscles to waste away, but in long-standing cases of this affection, absolutely placed beyond possibility. There may be no efficient muscular fibres spared, but only useless remnants of them.

But in reference to this question of providing for the nutrition of paralysed limbs, I have been much struck by some observations in Dr. West's lectures regarding the consequences of paralysis in early life. There is, as he proves explicitly, an effect of paralysis peculiar to childhood—"*arrestation of growth*." Might not this, as well as atrophy, be prevented by galvanism? The same cause, I presume, which leads to atrophy in the adult, leads both to atrophy and arrestation of growth in the child.

Dr. West's table of cases is very instructive; he mentions no less than six in which shortening of the limbs took place. Here is an instance: a boy when one year and six months old, was affected with paralysis of the right leg. Nothing was done for it; and when he was three years of age, it was "wasted and *shortened*, but power over it was on the increase."

Supposing a case of this kind wherein the paralysis is completely cured, can anything be done for the lameness consequent on the shortening? A trial should be made at least; and I think it would be right to advise that the *affected* limb should be used *more* than the *sound* one, systematically and perseveringly, or that the motions of the latter should be purposely prevented at certain times during the employment of the former; for perchance, by these means it might be possible to produce an inequality of growth to the advantage of the shortened member. Occasional galvanism, the use of friction, and the sudden application of cold now and then, might also be found useful. *Medical Gazette, Sept.* 29, 1848, *p.* 529.

20.—ON THE IRRITABILITY OF MUSCULAR FIBRE.—By EDWIN LEE, Esq., London.

[The remarks on this subject by Mr. Lee were occasioned by the following observation of Dr. Marshall Hall:—]

"No one seems to have seized the real value of the facts laid before the *Society, as setting* forth the cerebrum as the exhauster, and the spinal cord as the source and restorer, of the irritability of muscular fibre in voluntary muscles, two important principles in physiology," &c.

Admitting the general correctness of Dr. Hall's facts and experiments, I cannot but consider, in common with many others, that the deductions which he has drawn from them are not uniformly in accordance with sound physiology, or prove the spinal cord to be an independent nervous centre; inasmuch as a distinction has not been sufficiently made between the results of experiments on cold-blooded, and the young of some warm-blooded animals, and those which would be obtained by analogous experiments, if made only on the higher order of mammalia. I humbly conceive, that in this higher sphere the reverse of the above aphorism more especially obtains—viz., that muscular movements, through the intermedium of the spinal cord and nerves, are the exhausters of irritability, and that the cerebrum is the source and restorer of this power.

We see that during the partial suspension of the cerebral power over voluntary muscles, as in sleep, it is only the automatic and involuntary movements which are most easily evidenced on external stimulation: and which, by attention and the exertion of the will, are controlled when the brain is in full activity, as in the waking state, and in instances analogous to that cited by Dr. Baly, of the movements produced on tickling the infant's palm while asleep. The action of the cerebrum is still requisite, though not so directly as when volition is called into play. It is well known, also, that in cases of paralysis, the attention and the will have great influence with respect to the muscular movements and the sensibility of the paralysed parts. I need not do more than allude to the many instances of cure of long standing paralysis from mental impressions, and cases analogous to that recorded by a philosophical writer are occasionally met with. In a hemiplegic patient, completely paralysed as regards the power of movement, all external impressions made directly upon the paralysed parts were acutely felt: but when the irritating object or cause was concealed from him, as in pinching or pricking under the bed-clothes, the patient had no perception of the pain, or knowledge of the part irritated, though he experienced a general feeling of annoyance.

M. Cruveilhier observes, with reference to impressions made on the skin, in cases of paralysis, that the impressions are often very tardy, not being perceived by the patient till the expiration of fifteen, twenty, or thirty seconds; and some patients are insensible to pinching, though sensible to tickling the soles of the feet: and again, "There are cases of hemiplegia in which there is no tactile sensibility, nevertheless, external stimulation will produce more or less powerful shocks, of which the patient is unconscious. Thus, a patient may have no perception of tickling the soles of the feet, which, however, occasions sometimes abrupt movements, sometimes slight movements of the toes, sometimes only a fibrillary contraction of a muscle or muscles. Pinching, pricking, heat, cold, and other modes of stimulation, may produce like effects; but be it observed, that the faculty of thus provoking movements is soon exhausted, and that a longer or shorter period of repose is requisite for the power to be regained. These instances, to my mind, clearly prove that the cerebral influence, though weakened, is not altogether absent.

Thus, also, as respects the tone of the sphincters, (erroneously considered as a purely spinal function,) which are well known to become relaxed from stupor, intoxication, emotion, and other causes affecting the brain; and likewise, the continued action of the muscles of the back, and back of the neck, which maintain the trunk and head erect in the waking state, the cerebrum is the exclusive source of power.

With respect to galvanic excitation, the doubts expressed by Dr. Todd, as to whether a feeble galvanic current can penetrate to the muscles through the skin, and the opinion, that by its stimulation of the cutaneous nerves reflex actions are produced, seem to be solved and confirmed by the effects.

of the other modes of stimulation which have been adverted to, in which excitation of the surface (tickling) will often produce reactions, which pinching, &c., would fail to do. This shows, as Dr. Todd observes, with reference to the direction of the current exercising a decided influence in the one instance, and no material difference in the other, that the galvanic current acts primarily upon the nerves, and only secondarily through the nerves upon the muscles. This view is further confirmed by an experiment of Matteucci, in which a pile, composed of the muscles of fishes, frogs, and eels, showed several hours after death evident signs of the current; whereas a pile of the muscles of birds and mammifera gave no signs of excitability at the expiration of a few minutes; this difference of result manifestly depending upon the circumstance, that in the former class of animals the nervous influence and vitality are more universally and equably diffused throughout the organism, whereas in the latter they are more centralized. This opinion I not long ago expressed to Professor Matteucci, in a conversation with him, relative to a statement made by him—viz., that the current is maintained independently of the direct influence of the nervous system, and is not modified even when the integrity of this system is destroyed.

Lancet, April 29, 1848, *p.* 474.

21.—ON THE TREATMENT OF PARALYSIS FROM LEAD.—By Dr. R. B. Todd, F. R. S., &c.

In the treatment of lead-palsy, the great object is, if possible, to eliminate the poison from the body, and to prevent the introduction of further supplies of it.

The patient should be kept clean, should wash much, and use such means as friction, exercise, &c., to stimulate the excreting power of the skin. It has been thought that sulphur, when introduced into the system, has the power of neutralizing the effects of lead, by forming some innocuous compound with it; whether or not any such compound is formed I cannot say, but I have certainly found sulphur a very useful remedy, in the form of a sulphur-bath. The bath which I order for my patients consists of one, two, or three ounces of sulphuret of potassium, mixed with as many gallons of water. I give this to my patients empirically; but I am quite sure they derive much benefit from its employment.

Galvanism, as a local stimulant to the nerves, should not be neglected; I am certain it is of service. Our patient Halliday was much improved by it; and I mainly attribute the recovery of his power of moving his deltoid muscle, which he has now done, to its use.

In the use of galvanism, you must take care not to continue its employment too long each time. Half an hour each day, or still better ten minutes or fifteen minutes at three different periods of the day, will be found quite sufficient. Added to this, the subjects of lead-palsy should breathe pure air, and have good sustaining food.

Medical Gazette, July 14, 1848, *p.* 53.

22.—CASE OF PARALYSIS FROM ARSENIC.—By Dr. Hastings, Worcester.

[A lad of 16 years old, an out-patient of the Worcester Infirmary, after taking the liquor arsenicalis in doses of three to five drops thrice a day for seven weeks, for an eruption of a scaly character, was found at the end of that time to be suffering from great weakness and partial paralysis of both upper and lower extremities, with burning pain in the feet; the conjunctiva was also slightly inflamed, and there was a little pain in the epigastric region. The warm bath and preparations of iron were prescribed, and afterwards iodide of potassium and the application of galvanism; under which treatment he gradually recovered. The following remarks were made upon the case.]

Dr. Hastings observed, that the quantity of arsenic taken was so small in this case, that for some time he doubted whether the paralytic affection could arise from this mineral; but as all the symptoms which usually arise from this remedy were also present in a very remarkable degree on the progress towards recovery, he had come to the conclusion that from some constitutional peculiarity the patient was affected in this unusual manner. The man had nearly recovered the usual power in all the limbs, but Dr. Hastings was desirous of learning whether similar effects, from the use of arsenic in small doses, had come under the notice of any of the gentlemen present.

Dr. Tunstall, of Bath, said,—For the last five years and a half I have been attached to the Bath Hospital, as its resident medical officer, during which time I have had on an average from three to five patients always under a course of arsenic prescribed for the cure of lepra by my superior officers; from my experience I may safely assert, that the safe and efficacious dose is from ♏iij. to ♏v. twice a day, continued until the physiological effects *commence*, when the disease succumbs. The first appearance of redness of the conjunctiva, with febrile lassitude, constriction of the throat, and mucous irritation of the stomach, are signs that the constitution is under arsenical influence. By closely watching cases, I have never seen any of the severe effects of the protracted use of the remedy, but I am in a position to assert that all the good derivable from arsenic as a remedy, is produced by small doses cautiously watched. Mr. Hunt, in criticising Dr. Castle's case of poisoning by Fowler's solution, refers it to idiosyncracy, and throws a doubt upon the fact of its having been fatal, relating a case where a patient of his own took forty minims thrice a day, with "but slight inconvenience." Will Mr. Hunt, or any gentleman present, say that this dose could have been continued for even three days more, without producing the effects detailed by Dr. Hastings in his valuable communication? In estimating the fatal quantity of successive doses of a poisonous remedy, we have to consider the effects of *climate*, *locality*, and *temperament*, not mere idiosyncracy, for all these are important in estimating the doses and period of their continuance. Mr. Hunt states that out of the records of a multitude of cases, in no one instance did it appear that the medical exhibition of arsenic, not always cautiously administered, had proved either fatal or seriously detrimental to health, which is more than can be said of any other very active medicine. This, which I copy from the report of the South Eastern Branch of our Association, must not go forth uncontradicted. I cannot admit either the fact or the deductions; were I to do so I should be accessory to the death of thousands. Two cases I will relate:—

Mary Bottle, a healthy young woman, 21 years of age, is now a patient in the hospital for the cure of lepra. On the 6th of July she had prescribed for her the liq. arsen. potassæ, ♏iij., twice a day. On the 13th I found her thoroughly prostrate with the arsenical symptoms, and having watched her daily, I know that she only took thirty-six minims in twelve doses. I shall be happy to show this case to the members, and point out the peculiar glassiness of the conjunctiva, which is characteristic of the *continued* effects of a *previous* exhibition of the remedy, which produced the most marked effects on the specific disease. She has regularly continued the use of the thermal waters of our city, so useful in lepra and in combatting the effects of metallic poisoning, and is rapidly approaching a perfect cure.

The other is that of a young man, now under treatment for the cure of lepra, who discontinued the use of the liquor on the 4th of June; he has still the lassitude, the incapacity for active exertion, and the glassiness of the conjunctiva, and any slight cold reproduces the arsenical effects; he has been using the waters since that period and the skin is rapidly cleansing.

I have to remark that this truly valuable remedy should not be given to patients in the quantities so common in some parts of the country, where a half ounce bottle, with directions to take a certain number of drops twice or three times a day, leads to much unsuspected mischief; that we ought in the present advanced state of chemical science, to pause before we condemn persons for murder on *post mortem* evidence of the presence of minute quantities of arsenic, in order that we may obtain some particulars of the medical history of the deceased. Had Mary Bottle taken a few more *minute* doses, she would have died from taking, perhaps, one-fourth of the quantity taken by Dr. Castle's patient. Mr. Hunt may deny this, but I think I should have no hesitation in making an affidavit that she would have died from the cumulative effects of small doses of arsenic. In conclusion, allow me emphatically to say, that arsenic is a remedy which produces its beneficial effects by the slow accumulation of small doses; that these should be omitted on the first appearance of conjunctivitis, or other well-known physiological effects, in however slight a degree; and that where these are absent, the successive doses ought never, in the aggregate, to amount to what would, if administered in one dose, either be fatal or in quantity approach the minimum fatal dose on record.

Prov. Med. and Surg. Jour., Aug. 23, 1848, p. 458.

22.—USE OF THE ELECTRIC MOXA IN HEMIPLEGIA.—By Jos. Hinton, Esq.

[Some account was given in Part XVI. of the Retrospect, of a new method of applying counter-irritation by means of galvanism, for which we are indebted to Dr. G. Bird's researches. The following, Mr. Hinton tells us, is the case in which this plan was first tried. A man 32 years of age was admitted into Guy's Hospital under the care of Dr. Bird, suffering from hemiplegia. The attack had come on aboutt hree weeks previously, and had been treated antiphlogistically till the active symptoms subsided. When admitted into the hospital, he dragged the affected leg only in a slight degree, but the arm was perfectly motionless, and the right facial nerve was paralysed; he had occasional vertigo and pain in the head, and constant tendency to laugh when spoken to; the tongue turned to the paralysed side, and had a thickish fur on that side only. The treatment consisted in the administration of a purgative, and the use of electricity in the form of sparks drawn from the spine: and sulphate of zinc in grain doses thrice a day. On the 15th of January, sixteen days after admission, he was a good deal improved.]

From this date (Mr. Hinton says) little alteration took place until the 18th, when Dr. Bird ordered the following plan to be adopted. Two blisters having been formed, one about the insertion of the deltoid, and the other over the posterior part of the wrist-joint, a zinc plate, the size of half-a-crown, with copper wire attached, was applied to the upper and a silver plate to the lower. Over each plate, water dressing was applied, and above this, oiled silk, (merely for the purpose of retaining the moisture,) which was secured by strapping. The arm was then enveloped in a loose roller, through the folds of which the wires connected with the plates protruded, and on contact being made, the patient experienced a tingling sensation *at the silver plate alone*.

19th.—About 3 A.M. he experienced severe pain in the arm, which soon wore off. Motion very much improved; the arm can be raised to a level with the shoulder, and power over the fingers is greatly increased. The patient was quite delighted at the sudden progress which he had made. Tingling sensation still experienced. The apparatus was taken off in the evening; the surface of the upper sore (zinc) was coated with a firm whitish matter, like lymph. Nothing peculiar about the lower sore; the plates were again applied. For the next few nights he experienced severe pain and spasm of the muscles of the arm, but this did not last long. On the *20th* and *21st*, he thought that there was less motion, but on trial he could still lift the arm on a level with the shoulder. On the 22nd, he lifted it above the level of the shoulder, and could clasp slightly. On the 23rd, he could lift his arm on to his head. The slough forming on the zinc sore, appears to increase in thickness. Before taking off the apparatus, I tried whether any current was passing, but failed in obtaining any decided effect on the galvanometer. With another patient, who was then in the house, by constantly breaking and reforming the current, the needle moved over an arc of 30°.

[When the slough separated, a healthy granulating sore was left. He continued to improve for some time, the dose of zinc being increased gradually to seven grains. Mr. Hinton makes the following remarks on the case:—]

As connected with this case of hemiplegia, there are several points of great physiological interest, 1st. Emotional tendency.

Dr. Watson, in his Lectures, says, "after the coma has passed off, there are two ways in which the patient may be affected—1st, defective memory, more or less partial; and, 2nd, a peculiar tendency to emotion, especially *emotions of grief;* the patient will weep from slight causes long after the attack of apoplexy has passed off."

[The emotional tendency in this case, however, was characterized, Mr. Hinton observes, with a desire to laugh. He proceeds—]

2ndly. As regards *sensation* and *motion*. The law in cerebral paralysis is, that motion is more affected than sensation. When we meet with cases in which the opposite is shewn, we must look for some functional disturbance, some poison circulating in the blood, rather than to the existence of a clot. The influence of the inhalation of ether is a case in point, motion being little affected. Dr. Gull has offered the following explanation of the cause:—he says, "the law of lesion is this—any given injury to the fibres diminishes the power of motion more than that of sensation, whether the lesion be in the fibres passing from the corpus striatum, or from the optic thalamus to the convolutions." Two conditions arise from this—1st., the fibres of the sensory nerves are much more, say one-third, more numerous than the motor, if we may judge from the size of the posterior roots, as the fibrils have the same diameter. The ultimate stimuli, also, to the sensory nerves, are more numerous than those of the motor.

"2ndly. In *sensation*, the seat of perception is to a degree passive; in *motion*, it is an origin of power. It is evident that in the former a less vital condition is required than in the latter; hence *a priori* we should have concluded that a given injury would have destroyed volition more than sensation; and we should also have concluded that injury would first deprive us of directive influence, and then of the power altogether. These remarks are made, as bearing upon the received theory of there being distinct centres for sensation and motion, which hypothesis seems to have been unwarrantably built upon the great discovery of Bell on the double function of nerves, which discovery is by no means opposed to the idea of sensation and volition being in the same centre."

3dly. The more rapid recovery of the leg. This is important, inasmuch as it may mislead the inexperienced to suppose that the arm will also recover. Unfortunately this is too frequently found to be a false hope; hence the prognosis as regards the arm should be guarded. The reason for this, Mr. Mayo supposed to be that some shock was transmitted from the injured brain, and that in consequence it affected the nearest part most. Dr. Watson remarks, that if this were the case, we ought to have it always present; but out of seventy-five cases collected by Andral, twelve were of the leg alone. Dr. Gull offers the following explanation:—"The spinal cord, the nerves arising from it, and the muscles to which they are distributed, form a mechanism for motion, which acts according to laws included in its formation, and which can be modified by habit, becoming part of the law of the machine, and termed automatic. The volition, having its origin in the encephalon, can direct and move the machine. From observation, we find that the voluntary influence can be directed with the greatest precision and force upon the upper extremity. We also find, from observation, that, the spinal cord being separated from the direct influence of the encephalon, the arm reacts less on an impulse being given to its nerves, than the lower extremity, from which we may infer that the original automatic power of the arm (excito-motor power) is less than that of the leg. Hence, if only a certain influence passes to the spinal system from the encephalon, the leg will be more affected than the arm; that is to say, in other words, volition will be more marked in the lower than in the upper extremity in recovery. Another circumstance must be taken into account in considering the phenomena of recovery from a clot—viz., that as the nervous centres are everywhere continuous, and that each part is readily affected by injury to those adjacent, so any given injury to the encephalon will react most on that part of the spine which is nearest, *cæteris paribus*.

The twelve cases noticed by Andral may appear to negative this view; but it remains to be proved by further observation whether these cases were really genuine cases of hemiplegia from cerebral hæmorrhage, or whether they may not be more correctly attributed to spinal affection. Two cases have lately come under Dr. Gull's notice, in both of which, on careful examination, the spine was found to be implicated. One of these is an out-patient; the other is at present in No. 3 Charity ward. In the latter case it appears doubtful whether any cerebral hæmorrhage took place at all, and whether the cerebral symptoms may not be referred to increased vascularity alone.

4thly. The *involuntary raising* of the *arm* during the act of yawning. This fact is mentioned by Carpenter, but no attempt is made to offer any explanation. Here also I may state an explanation proposed by Dr. Gull: "This may be explained by the fact that injury to any of the fibres going from the corpus striatum or thalamus opticus to the convolutions, diminishes the power over the extremities:

A Thus, if the line of continuity from A to B be interrupted,
+ no force can pass from A to B; but if the force originates in
B B, it may pass on to C below it. Now if we let A represent
| the cerebral hemispheres, and B the medulla oblongata, C
C the brachial plexus, the explanation is tolerably clear.

5thly. *Irregularity of pupil.*—The third nerve arising above the bifurcation ought to be affected on the same side; and so it was in this case; the left pupil was considerably larger than the right.

6thly, and lastly. The *state of the tongue.*—This I have not seen noticed in any book: it is frequently connected with local irritation on one or other side of the mouth, such as cynanche tonsillaris or diseased teeth; but there was nothing of the kind to account for it here. Might it not arise from the want of motion on that side of the tongue; so that, being less subject to friction than the sound side, the mucus, &c., collects upon it, and remains there, while the other side is less free? In this case it varied from time to time, being occasionally absent, but most frequently it was well marked.

Med. Gaz., July 7, 1848, *p.* 30.

24.—ON THE THREATENINGS OF APOPLEXY AND PARALYSIS.—By Dr. Marshall Hall, F.R.S., &c.

[Dr. Hall makes the following observations on]

The theory, prevention, and treatment of paroxysmal apoplexy, or of that form of apoplexy, with its too usual sequel, paralysis, which, arising from causes distinct, in the first instance, from disease within the head, appears in the form of *threatenings*—the minæ apoplexiæ of the classic Heberden.

[These threatenings consist in a seizure of vertigo, loss of recollection, confusion of ideas, with a tumid purple countenance, which may pass off and be forgotten, or may again and again recur, until it ends in the organic apoplectic seizure. In attempting to elucidate the nature of this paroxysm, Dr. Hall first argues that the tissues of the head and neck are in a manner erectile. He says:—]

The whole region of the head and neck, with the encephalon, and the several organs of mind, of sense, and of motion, is doubtless made up of tissues which may be compared to the erectile. The eye becomes erect when we *look* earnestly and intently. If we attempt to read whilst walking, and meeting the wind, it speedily becomes suffused with tears, no such effect being observed when, in similar circumstances, we do not urge the organ into intenseness of action. For this reason the occulist desires the patient affected with ophthalmia not to use the affected, or even the unaffected eye.

The condition of accurate adjustment of the eye is one of erection, and connected with the action of certain muscles. Doubtless the ear is affected in a similar manner, and the difference between merely hearing and listening intently, is one of erection of the organ, dependent, like that of the eye, on the action of muscular tissue.

It would be out of place here to say more on this subject, but I cannot resist the temptation to make one remark. Many deaf persons remain deaf from the want of the *habit* of listening, by which the power itself is lost; just as such persons are found to hear when driving along in a carriage, though deaf in ordinary circumstances, the act of listening being induced. The slightly deaf person should be exercised in listening—in inducing erection of the tissues of the ear.

In a similar manner, the senses of touch, smell, and taste, may be improved, as is well shown in cases of persons who use those senses to supply the want of others which are lost. All are aware of the singular effect on the tissues of the mouth, on the action of the salivary glands, and of their ducts in propelling the saliva, in the act of mastication, and even from the view, or idea, of savoury food. So of the brain and its connected tissues. When the powers of the mind are intensely concentrated, the circulation in this region is augmented, and its vessels distended, congested. In the strife for the senior wranglership, the student sits for hours at his subject with a wet towel wound round his head, to moderate the excessive fulness of its vessels.

But great as is the effect of *attention*, that of the various *emotions* is infinitely greater. We have only to watch the effects of shame and of anger, the former so attractive, the latter so repulsive, both so extraordinary, as denoting the action of the muscular system of the neck, and distending the veins, and thence those vessels which, situated between the capillary branches of the arteries, and the capillary roots of these veins, may be justly denominated the *intermediate* vessels or canals of the tissues—the real vessels of those tissues, the rest being but *machinery* for the movements of the blood.

Whatever may affect any erectile tissue, may affect the circulation of the head and neck. This is doubtless principally effected through the special muscular system of this region, and especially that part of this system which influences the larynx, and that which, by compressing the veins, induces fulness, congestion of their roots, and of the vessels which, in the normal and unimpeded circulation, empty themselves into them. These muscles are in a remarkable degree under the influence of emotion and of the excitants of reflex action. Remoter causes which influence the condition of the veins of the head and neck are, affections of the heart, its dilatation and disease of its valves, and affections of the respiration. To these topics I shall have to revert in the following section, my present object being to treat of the head and neck as purely erectile organs or regions; and of the causes which, influencing the muscular and circulatory systems in such organs and regions, induce the various physiological and pathological conditions observed in them; and especially of those forms of the latter which are periodical or paroxysmal.

Of these last, even apoplexy and hemiplegia, and other forms of paralysis, are examples. The threatenings of apoplexy, the transient forms of paralysis, are of this character, and constitute an object of medical study of the most intense interest, inasmuch as the *prevention* of incurable, or imperfectly curable disease, too often ageing the young, and crippling the aged, depends upon it.

[After speaking of the effect of a ligature gently applied round the leg of a frog, upon the circulation in the web of the foot, as seen with the microscope, Dr. Hall proceeds to say :]

Now let us imagine the jugular and vertebral veins of the neck compressed by the platysma myoides, the cleido-mastoid, the omohyoid muscles, &c. The effect of emotion, or of reflex action, impeded circulation, distension of the veins, congestion of the intermediate blood-channels, tumefaction and venous lividity of the features, and of the conjunctiva, and a similar condition of the encephalic tissues take place, with the varied cerebral, visual, and auditory symptoms—paroxysmal apoplexy. How happy if it proceed no further!

This compression of the veins of the neck, is various, and quite special in different cases. Contraction of the platysma-myoides, for example, affects the external jugular chiefly; a more gentle, but more general action of the muscles of the neck leads to more general compression of the veins, and sleep; a more specific action induces blushing, which may be limited to the cheeks, or diffused over the head, face, neck, and bosom; a fit of anger is not only a "furor brevis," but it is a brief and violent sphagiasmus and cerebral action and congestion; compression more sustained and complete leads to cerebral congestion and all its formidable symptoms—loss of memory or of consciousness, drowsiness, stupor, coma, &c. From this cause I have also observed, and most carefully observed, transient delirium, mania, spasm, paralysis, in cases which I propose to detail hereafter.

Other causes of abnormal circulation in the head and neck exist. Diseases of the heart itself, of which *one*, hypertrophy, augments the flow of the arterial blood, and of which *all* induce impeded circulation along the veins—a fact of far greater moment, have their influence in inducing the apoplectic state. But it must be remembered, that the influence of disease of the heart in inducing impeded venous circulation, is a remote effect, through the pulmonary circulation. It is a part of the subject of the *arriere circulation*, which I have elsewhere treated at some length.

The difference between augmented flow of blood along the arteries, and its impeded return by the veins, on the *intermediate* blood-channels and organs, is extreme. The most violent *exercise*, as in running, the respiration being free and proportionably accelerated, only suffuses the face with florid blood, freely circulating; violent *effort*, on the contrary, as in lifting, in which respiration is arrested by closure of the larynx, induces a purple tumefaction of the tissues of the face and neck, from impeded flow and stagnation of venous blood. It is the difference between *augmented* and *impeded* circulation.

There is a great difference, too, between the *degrees* of impediment to the return of venous blood—the violent muscular efforts in ordinary vomiting, fits of coughing, &c., fill the tissues of the face with venous blood; but still more violent acts of vomiting, the efforts of parturition, the convulsions of epilepsy, actually cause the thin parietes of the blood-channels of the face to yield, and induce minute *ecchymosis*, seen in the eyelids and on the temples.

Let the impediment to the reflux of the venous blood be greater still, and especially more specifically of the veins of the neck, and we cannot be surprised at the occurrence of loss of consciousness—cerebral epilepsy, if transient, apoplexy, if more permanent, with or without cerebral *ecchymosis*. A tumour, or ligature, or spasmodic action of the muscles, compressing the veins of the neck, produces this effect. Much, too, depends on the degree of suddenness of this compression. In diseases of the heart, we observe the features tumid with venous blood without apoplexy, which may, however, occur eventually gradually. But the sudden compression of the veins of the neck, from the action of the platysma-myoid and omo-hyoid, induces the apoplectic state instantly.

This apoplectic state may consist of mere congestion, and is then transient; or of ecchymosis or rupture. with laceration of the brain, and is then persistent and hemiplegic; or if the attack of mere congestion be often repeated, effusion of serum may take place from the internal surfaces of the cerebrum. A further difference may consist in the difference of the vein or veins affected: the jugular seems to be in more immediate connexion with the cerebrum; the vertebral with the medulla oblongata; at least I think this probable.

It is extremely interesting to observe the influence of impeded or arrested flow of blood in the veins upon the *arteries*. I have already alluded to the experiment of applying a ligature on the inferior extremity of the frog, in which this is *seen* under the microscope. The phenomenon deserves to be noted more particularly. If we tie a ligature round the frog's leg, the web being spread under the microscope, we instantly see the whole circulation, which was equable, or nearly so before, become pulsatory. If we tie the ligature a little more tightly, the globules of blood are observed to oscillate even in the arteries. and to proceed and to retrograde, at each systole and diastole of the heart. The intermediate vessels, meantime, become distended with blood, and even dilated in their diameter. So, in sphagiasmus, the temporal and carotids *throb*, whilst the tissues of the face and neck, and even the chest, become tumid, and purple with venous blood; the patient complaining that his cravat is tight: that he is giddy, and in danger of falling; or oblivious; or incapable of mental effort or attention; or dosy, falling asleep over his book, and even over his writing.

As to efforts unattended by closure of the larynx, as the rapid ascent of a hill, they have no tendency to produce apoplexy, or extremely little. It is not accelerated arterial circulation, but impeded venous circulation, which is the source of danger. It is because they do not act by inducing sphagiasmus, specifically, but more generally on the venous system, that efforts, whether voluntary, as in lifting, or involuntary, as in vomiting, do not, in general, lead to the apoplectic seizure.

[The following appears to be a summary of Dr. Hall's views:]

The tissues of the neck, face, and head are subject to influences similar to those which affect the erectile tissues. The former, like the latter, become tumid by certain emotions, as shame, anger, &c., and collapsed by others, as fear, anxiety, &c. Shame and anger suffuse and tumefy the countenance, the eyes, the cheeks, the forehead, the neck, and even the integuments of the thorax, distending the capillary vessels. A fit of anger, and especially of suppressed anger, has passed into an attack of apoplexy! Sphagiasmus has existed in such a degree as to over-distend, or even to induce yielding or rupture of the capillary canals.

What certain motions effect, is effected too by a loaded condition of the stomach. The tissues of the face and neck are affected with capillary or venous congestion, and the patient—for such he is—becomes affected with a sort of sub-apoplexy—dozing, or rather sleeping, heavily, and with stertor. As the effect of emotion in one case, and of excited reflex action in the other, the muscles of the neck are brought to contract on the veins of the neck, (and as in epilepsy it is chiefly the veins returning from the medulla oblongata, so it is in the threatening of apoplexy those which return the blood from the cerebrum and cerebellum,) and the sub-apoplectic state is induced.

But it is, as I have stated, the agitation of speculations in commerce which most conduces to dangerous congestion of the cerebral vessels, and the danger of the apoplectic or paralytic attack, as of epilepsy, and of others of *this class* of diseases, as mania, suicide, &c.—so perfectly allied are these apparently dissimilar morbid affections.

[And as to treatment, Dr. Hall gives the following hints:

The slightest paroxysmal occurrence of head affection should be as a most earnest warning voice to the physician and to the patient, being carefully traced to its cause—whether this be emotion, with its direct influence, or irritation, with its reflex action, on the muscles of the neck, and its consequences on the venous circulation of the encephalon.

This warning voice unheeded, and apoplexy, hemiplegia, or more partial paralysis, and the loss of the mental faculties, are the consequence; the young become old and decrepid, the aged become infirm and crippled, in a moment of time. All emotion should be mitigated or removed by absence and recreation—affairs should be relinquished, and diversion, and change, and active occupation, should be sought carefully. *The* remedy of remedies is—*travelling*.

The source and nature of the irritation should be discovered; the stomach and intestines should be kept absolutely free from all indigestible ingesta, and from excretions too long retained; uterine irritation should be as carefully allayed. On the occurrence of the *slightest* admonitory symptom, the patient should be enjoined to take some fluid, and promptly and effectually to irritate the fauces and induce the vomiting; and then to use an ample enema. He should then, if necessary, take an efficient emetic and purgative. These remedies should be kept in readiness at all times and places. They are equally important, whether the apoplectic, the epileptic, or the maniacal seizure be portended.

The most rigid system of diet, the strictest attention to the state of the bowels, the utmost care at catamenial periods, should become the patient's duty, and be most conscientiously performed. In the actual attack, an effectual emetic, enema, and purgative should still be speedily administered, together with instant venesection. Afterwards, in the case of uterine irritation, fomentations, enemata of warmer water, perhaps slightly opiate, should be administered.

As preventives, early hours, a raised position in bed, the head being kept cool, and the stomach being empty; freedom from emotion; ample walking exercises in the course of the day, with a very light digestible diet, and an unloaded condition of the bowels; great attention to the catamenial periods, &c., and all these well-sustained, are the most important. The objects throughout are, to avoid all exciting causes, to remove these if they have been allowed to exist, and to exchange the morbid actions for others. In this last point of view, the excitement of vomiting is most important. Cold water may also be dashed on the face and neck, to excite other actions—the act of inspiration, by which the veins are emptied, especially. With the same views, the nostrils may be irritated. In a slighter attack, the patient should be instructed to make frequent, energetic, and deep inspirations voluntarily.

It is scarcely necessary to add, that the most *direct* remedy, in the case of actual seizure, is to relieve the sphagiasmus by opening the external jugular at once, or emptying the intermediate cutaneous vessels by cupping.

The reader is, doubtless, now convinced of the importance of a full development of the *theory* of apoplectic, of convulsive, and of maniacal affections, for *all* these are closely allied. The *first* step towards the comprehension of this subject was the separation of *The Spinal System*, with its excito-motor, reflex actions and functions, from the cerebral and the ganglionic; the *second* is the due appreciation of the direct and reflex muscular actions, and their varied influences, taking place in the important region *of the neck*. It must be remembered that the preceding observations relate entirely to what I beg to designate *paroxysmal* apoplexy.

Lancet, *July* 22, 1848, *p.* 93.

[illegible]—ON THE TREATMENT OF APOPLECTIC SYMPTOMS ARISING FROM DISORDERED LIVER.—By G. Corfe, Esq., Middlesex Hospital.

When we review the comparative analysis of the effete matter thrown off by the liver and kidneys, and observe the large amount of carbon and nitrogen which these organs separate from the circulation, it need not be matter of surprise that similar disturbances arise in the head and the nervous system, generally, from a gorged and torpid liver, as are seen to occur from urea and other elements of urine being pent up in the system, from degeneration of structure in the secreting portions of the kidneys.

Why should not the elements of bile, so long as they circulate in the system, and are not duly and actively eliminated by the lobules of the liver, be considered equally as poisonous to the nervous system as is urea in ischuria renalis, or as is laudanum when taken for a suicidal purpose?

It has repeatedly happened that a bulky, strong, and perhaps plethoric laborer seeks relief amongst the casual patients in the out-door department, complaining of a distressing sense of giddiness, fear of falling down in the streets, tinnitus aurium, sleepless nights; or else the very reverse, heaviness, and disposition to sleep at all hours of the day, if he only sits down for a few minutes. Such symptoms, it must be acknowledged, are too often assigned as the precurser of apoplexy, and the man is actively bled, cupped, and blistered. No observing practitioner will deny that such alarming features of a case demand some vigorous and active treatment; but the question at issue is simply this:—Do such symptoms fade away under the active antiphlogistic treatment so readily pursued by many? Doubtless they do not. Whereas, if, as is usually the practice here, the patient is ordered to take a full dose of calomel, for instance ten grains, and the same quantity of extract of colocynth, and that the latter is repeated three or four times a week in smaller quantities, followed by a cathartic draught; and, further, if the alvine secretions are observed to pass from a dark mahogany color to that of an ochrey tint; the usual result is a disappearance of all the cerebral symptoms in proportion to the clearing of the loaded gall-bladder and its adjoining ducts.

The late Mr. Abernethy was accustomed to observe to his class, in his usual quaint style, that if ever they wanted te solicit any favour from some superior in life they should be careful to make their wishes known, first, to the *valet de chambre*, ascertaining from him at the same time, if possible, whether his master had been to the water-closet that morning, and whether he had been comfortable and pleasant in his temper since; for, said he, "if an irritable old fellow does not get a comfortable evacuation every morning after his breakfast, he is sure to be sour and irascible the whole day afterwards." There is much truth couched in this rude observation, and the influence of the heptatic circulation and secretion over the nervous system is too remarkable to escape the attention of a practical man.

Medical Times, Aug. 12, 1848, *p.* 235.

26.—ON FLUID WITHIN THE VENTRICLES AS A CAUSE OF COMA.—By Dr. R. B. Todd, F.R.S., &c.

The accumulation of fluid in the ventrieles, when it exceeds a certain amount, produces coma. In the adult the comatose symptoms come on earlier, and with a less amount of effusion than in the child, from the resisting nature of the cranial wall in the former, whilst in the latter, the still open state of the fontanelles, and of some of the sutures, allows the skull to expand as the fluid in the ventricles increases in quantity.

On the other hand, the increase in the subarachnoid fluid is not in itself accompanied by any special symptoms. This augmentation of a fluid which naturally occupies the subarachnoid space, is due entirely to a shrinking or diminution in the bulk of the brain, from whatever cause; and its quantity bears, too, an inverse proportion to the bulk of the brain. You find it in large quantity in the crania of persons dying anæmic, and also when the brain has been much impaired in its nutrition, so as to cause a diminution of its bulk; and even if there be a local diminution of bulk, as when one or two convolutions have shrunk, or have sunk in from the destruction of the subjacent cerebral substance, you will find an accumulation of fluid opposite the shrunk or depressed convolutions.

Medical Gazette, Aug. 25, 1848, *p.* 319.

37.—SUGGESTIONS FOR THE TREATMENT OF HYDROPHOBIA.—By Dr. MARSHALL HALL, F.R.S., &c.

If a frog be subjected to the influence of strychnine, two events may take place—

1st. If it be continually excited to spasm by the irritation of a probe, life becomes extinct in a very few minutes.

2nd. If, instead of being so irritated, it be placed in a cool place, as a cellar, all excitation being avoided, it as certainly recovers.

A third order of facts is one of extreme importance. The effect of strychnine is *not* one of a spasmodic condition, *but* of extreme *susceptibility* to spasm. This susceptibility is seated in the centre of the spinal system; but each and every spasm is an excited reflex action. In this *last* respect hydrophobia exactly resembles the effects of strychnine. May it not in the *first* and *second?*

But in hydrophobia the patient dies of *asphyxia*, arising from repeated paroxysmal closure of the larynx. Imagine this asphyxia and all excitement of reflex action avoided. Of what, then, would the patient die? and why should he necessarily die?

I have often thought of a prompt mode of performing the operation of tracheotomy. This being accomplished, whatever spasm of the larynx there might be, there could be no asphyxia. The patient should then be carefully placed on a *spring*-bed, and surrounded by ranges of curtains of lace or "*net*," and every *current* of air, every *shake of the bed*, or of the *floor*, in a word, every excitation or cause of *reflex action* and of *emotion*, (for these generally go together, the same *spinal centre and system* being the seat of both) should be absolutely avoided.

The patient could not, as I have said, die of asphyxia; he would not die of the nervous exhaustion induced by the continual excitement of emotional and reflex actions. Why, then, should he die? Why should he not survive, until the poison should be eliminated from the system? Tetanus differs from hydrophobia in being a disease of *refleex*, not *direct origin*, and, perhaps, in being more or less persistent; but it is equally *paroxysmal* in its aggravations, if not in its actual existence, and requires in its treatment the same measures to avoid excitation. Many other fatal diseases, besides hydrophobia, might be treated, with the hope of saving life, by the simple mode of performing tracheotomy which I have proposed, if *perfected*.

Instrument for the Performance of Tracheotomy: invented by Dr. M. Hall.—This instrument consists, first, of a cylinder of steel, of the proper diameter, and with its lower edge extremely sharp. It may be either circular or oval, with greater or less eccentricity. Within this cylinder a piston moves, which being drawn upwards, admits of being removed altogether, whilst another cylinder, of which one side overwraps the other, admits of being compressed and introduced into its place. This cylinder is pushed so as to project beyond the cutting edge of the former, expands, and makes gentle pressure outwards, so as to occupy its place, and to prevent hæmorrhage. The steel cylinder is then removed. Finally, from the silver cylinder two-thirds admit of being detached, at a part on which a silver disc admits of being fixed.

The instrument being placed over the trachea, at the point chosen by the surgeon, over which an incision is made through the integuments, it becomes an "emporte morceau." A portion of the trachea being detached, and forced into the cylinder as the piston is drawn upwards by the atmospheric pressure from within the trachea, the operation of tracheotomy is performed, and without the loss of blood. The silver cylinder being now introduced, it remains fixed within the opening thus made, pressing gently on its sides, so preventing hæmorrhage, and buttoning as it were, and remaining fixed within the trachea. This tube is now shortened by detaching two-thirds of its length, and receives the disc. All is safe, and the patient breathes through the silver tube.

I believe a trocar has been proposed to effect the same object; but this is a clumsy instrument, and without great care must wound the posterior part of the trachea. The ordinary mode of performing the operation is, in general, so tedious, as to be inadmissible in hydrophobia or tetanus; it would probably destroy the patient on the principle of *excitation* explained in my recent communication.

[In reference to Dr. Hall's suggestion that tracheotomy ought to be performed in hydrophobia, Mr. J. Turner, veterinary surgeon, refers us to a paper in the Lancet for Dec. 9th, 1843, in which he himself made the same suggestion.] *Lancet, Aug.* 5., *p.* 151; *Sept.* 2, & 16, 1848, *pp.* 283 & 326.

28.—CASE OF HYDROPHOBIC MANIA TREATED BY CHLOROFORM.—By R. Y. Ackerley, Esq., Liverpool.

[A labouring man, thirty years of age, was observed last January to be out of health, low-spirited, and irritable; he shortly afterwards complained of giddiness—had flushing in the face, rambling, and sleeplessness—felt great apprehension and foreboding of something dreadful about to happen—and spoke especially to having been bitten in the leg by a rabid cat ten or eleven years previously. The delirium, restlessness, and fever increased, in spite of appropriate treatment; horror of fluids followed, with sullenness, injection of the conjunctivæ, and at last violent mania. On the 20th of January, in consultation with Mr. Bainbrigge, Mr. Ackerley tells us,]

We now came to the determination of trying the chloroform, which put him to sleep in about three minutes; he did not awake again for three-quarters of an hour; when he appeared much more calm, recognised his wife, and kissed and embraced her; deglutition better; the bowels had not acted; pulse ninety. To have four ounces of infusion of senna, and a blister over the scalp: in the evening we found him much quieter: the bowels had acted; passes his urine and stools involuntarily. The effect of the chloroform was so decided in the morning that we resolved to repeat it, which was accordingly done with the same beneficial effect. The cerebral symptoms, however, returned about one in the morning, and at our visit at ten o'clock on the 21st, we found him a perfect maniac; conjunctivæ of both eyes much suffused; dilatation of pupils; skin cool; no unnatural action about the carotids; spasms of the limbs increased, and extending to the muscles of the spine, producing occasionally a state of ophisthotonos. The chloroform was again administered, and he remained very quiet during the day, sleeping at intervals. The chloroform was used again in the evening. The emaciation was very marked, and to a greater extent than we had ever seen it in any other disease of the same duration. He was ordered wine and brandy, with arrow-root and beef-tea.

22d. This morning we found him worse again; total deprivation of all his mental faculties. Ordered an ointment of tartar-emetic and croton oil, to be rubbed over the whole extent of the spine. Ice to be applied to the head, and to have the chloroform. In the evening, symptoms somewhat better; chloroform repeated.

23d. Has passed a more comfortable night: the conjunctivæ less suffused; countenance more intelligent; tongue becoming moist and less red; pulse ninety-four; bowels constipated; ordered one drop of croton oil every four hours: chloroform repeated. Evening; appears better in every respect; the bowels have acted. Ordered muriate of morphia, one grain, to be taken immediately; and chloroform.

24th. Had several hours sleep, and is more sensible: complains of his hands and feet feeling cold. The ice to be discontinued, and to have hot water to the feet. Ordered chloric ether, half an ounce; carbonate of ammonia, half a drachm; champhor mixture. seven ounces and a half. Mix. An ounce to be taken every three hours. Evening; better in every respect, except that the pulse has got up to 120; this might be attributed to his having too many of his friends seeing him. Gave the chloroform, and in fifteen minutes we found the pulse had come down to eighty-eight; repeat the morphia and mixture.

26th. Has had an excellent night; returning intelligence; pulse ninety-four; skin warm: still passes his urine and stools under him; expression of countenance improving. From this time the improvement was so rapid and continuous that I shall not consider it necessary to describe the symptoms daily. The chloroform was administered occasionally, with tonics and stimulants; and in about a fortnight he went into the country, quite well both in mind and body. *Lancet, July* 29, 1848, p. 122.

29.—ON TETANUS.—By S. G. Wilmot, Esq., Resident Surgeon to Steevens' Hospital, &c.

[M. Wilmot lays down the following propositions:]

1st. That tetanus depends on irritation, directly or indirectly, of the excito-motory system, or true spinal cord, by which it becomes surcharged with motor influence; and that inflammation in or about the cord, or any appreciable lesion, is not an essential condition for the development of the disease.

2nd. That, while we have ample evidence, physiological and practical, that opium is ill-calculated to fulfil the indication in tetanus, namely, to diminish the excitability of the true spinal cord, until our views become improved, and the knowledge of an anti-tetanic agent ceases to be a *desideratum*, we are not justified in discarding altogether this drug.

3rd. That our grand object in the treatment of tetanus should be, to support the patient's strength by the administration of stimulants and strong nourishment, with a view, as it were, to compensate the vital powers for their great exhaustion consequent upon the expenditure of force by the violent muscular contractions, which in some cases are excessive.

4th. That as the removal of the exciting cause, once the first evidence that irritation has been propagated to the spinal cord becomes manifest, does not in the least degree check the progress of tetanus, or abate the violence of its symptoms, all operations, in traumatic cases, are generally not only unnecessary, but injurious.—*Dublin Quarterly Journal, August*, 1848, p. 28.

30.—CASE OF TRAUMATIC TETANUS TREATED BY CHLOROFORM.—By R. L. Baker, Esq., Birmingham.

[On the 23rd of March, a man employed in a brewery got a portion of one of his fingers torn off by machinery; and a day or two afterwards pain, nausea, and febrile symptoms came on. Early on the morning of the 28th, Mr. Baker tells us:]

I received a very urgent message, stating that he had had no sleep since I saw him, and that he had been dying since two in the morning, and I was requested to meet Dr. Bell Fletcher. At eight o'clock I visited the patient with Dr. Fletcher. We found him perfectly stiff with tetanic spasms. He appeared conscious, but had lost the power of articulation and deglutition. The whole surface of his body was bathed in perspiration: every muscle seemed implicated in the spastic action; indeed, he had all the ordinary symptoms of traumatic tetanus, and we had no hope of his recovering from this condition. We ordered a turpentine enema to be administered immediately, and the (query, tincture of) cannabis sativa to be given in doses of twenty minims every three hours; and thinking it a favourable case for the application of the chloroform, we arranged that I should administer it on my next visit. At two P.M. I again saw saw him, and found him in the same state in which we left him in the morning. The attendants could not get him to swallow the medicine, and had made ineffectual attempts to give a glyster. Under these circumstances I administered the chloroform on a handkerchief, and in about three minutes the muscles began to relax. The thumb, which had been firmly grasped by the fingers into the palm, became quite easily moved; for a short time he muttered incoherently; then answered two or three questions rationally; and finally sank into a sound sleep, with the muscular system relaxed and free from convulsions. I kept up the effect of the chloroform for three-quarters of an hour, and left him asleep, having prescribed a blister to be applied to the back of the neck, and two grains of calomel every two hours, to get free action of the bowels. At nine P.M. I again visited him, and learned that an hour after I had left him, he awoke, as if from sleep, with the free use of his limbs restored, and asking to be assisted to the night chair, where he had a copious stool, and entered into rational conversation with those around him. From this time his general health gradually improved; but the finger continued much swollen. Finding, on the 3rd ultimo, that the pain had increased, with slight muscular convulsive twitches, and thinking that the finger might be the cause of irritation—consequently, being fearful of a return of the tetanic symptoms, I determined to remove the finger at once. Not having the chloroform with me, I amputated it without its use; and since its removal there has been no return of the convulsive symptoms, and my patient is doing well.

The tetanus came on five days after the accident, and the finger was amputated on the eleventh day after the original injury, and six days after the successful administration of chloroform. *Lancet, June* 3, 1848, *p.* 610.

31.—CHRONIC TETANUS TREATED BY ETHER INHALATION.

Dr. I. Parrish read to the Philadelphia College of Physicians, March 7th, an interesting case of phlegmonous erysipelas, commencing in the finger and extending up the hand and arm. Rigidity of the jaws supervened on the sixth day, followed by shooting pains up the limb to the neck and jaws. The preparations of opium, assafœtida, &c., having failed to make any impression, the inhalation of ether was tried on the seventh day, and it produced a most favourable anodyne effect, causing several hours' refreshing sleep. The inhalation was repeated on the eighth day, also, with a favourable effect. Convalescence from this time was confirmed, and the patient recovered.—*American Journal of Med. Science*, July, 1848.

Medical Gazette, October 20, 1848. *p.* 689.

32.—CASE OF TETANUS AFTER AMPUTATION, CURED BY THE INHALATION OF ETHER.—By J. G. Lansdown, Esq., Surgeon to the Bristol General Hospital.

[The patient was a man 22 years of age with disease of the foot and ankle, for which amputation was performed at the ankle joint by a modification of

Syme's operation. A few days after the operation, slight difficulty in swallowing was experienced, for which an opiate was given.]

Nov. 10th. Ten P.M.; being ten full days from the period of the operation. The difficulty in opening his mouth had much increased; the muscles of the neck were very rigid; pain over the pectoral muscles continued through to the back. At this time I placed half an ounce of ether in the bladder, which he inhaled four minutes; he could then open his mouth much more freely. After waiting half an hour he inhaled again; he then said he felt no pain nor inconvenience about his face; the muscles of the neck were less rigid, and he could open his mouth more freely. He continued the inhalations of the ether every four hours, and after each could open his mouth to take nourishment; he also took the soap and opium pill.

12th. Head more drawn back: the tongue covered with ulcers from being caught between the teeth; obliged to keep something between them to keep them from closing. He cannot now use the pipe of the bladder, a sponge being substituted; the wound emitting a peculiar discharge, very offensive, thick, and of a dirty yellow colour. The bowels being costive, two drops of croton oil were given, which produced good effect, and which was repeated as occasion required until recovery. To procure lengthened sleep, one grain of morphine was given three times a day.

15th. The spasms have increased in intensity and frequency, occurring every three or four minutes. When the muscles are not under the influence of the ether, he cannot swallow the smallest quantity of fluid, the attempt to do so brings on violent spasms; he appears almost choked, and then dashes the spoon from him, the forehead at the same time being covered with large drops of perspiration. The pain from sternum to the back increased; abdominal muscles quite tense.

17th. Has continued nearly the same to this time, as at last date. To-day, while dressing the stump, a large portion of the heel dropped off.

18th. Spasms less.

25th. Has continued to improve, the spasms being fewer, and less severe; the stump granulating freely from the end of the tibia. The treatment has not been altered, but the doses of morphine and croton oil have been varied; morphine to be omitted to-night.

Dec. 1st. Opened his mouth sufficiently wide to put out his tongue, and he kept it out for a short time.

4th. Has had no spasm since last date, but has continued the ether of his own accord, fearing lest he should have a return. Discontinued its use. The stump when he left the hospital was nearly covered by the integument, and was all but well. He left, fearing he might have fever and die there. Throughout the whole case, which continued three weeks, ether was the sheet anchor, producing every time it was used, instant relief; the morphine did its work in quieting the spasms and procuring more permanent sleep; the bowels were always constipated, unless when he took the croton oil; the spasms were frequently so severe that I thought it almost impossible he could live through them. *Lancet, Sept.* 16, 1848, *p.* 309.

33.—CHLOROFORM IN DELIRIUM TREMENS.—By S. L. GILL, Esq., Stepney.

Within the last few months, I have several times attended a Mr. T., with delirium tremens, and upon each occasion I have been obliged to give enormous doses of opium to produce relief. Upon the 25th of March, I was again called to attend my patient, whom I found in a state of "furious delirium," no one daring to restrain him. I gave him an ounce of tincture of opium, which did not produce any perceptible effect. The delirium continuing, I resolved to try the effect of chloroform; but owing to the great excitement under which he laboured, I had the greatest difficulty in getting him to inhale it. I at first used a drachm, with but little effect, which, however, I impute to imperfect inhalation. I then used half a drachm, when he speedily became more tranquil, and fell into a sleep which lasted ten minutes. I then administered a scruple more; his pulse sank rapidly, and he fell into a calm and sound sleep, which lasted for two hours, at the expiration of which he awoke greatly composed, and so remained for six hours; but on his again becoming fractious, I resorted to opium, under the use of which, and other usual remedies, he is now doing well.

Lancet, June 3, 1848, *p.* 609.

34.—ON THE DERANGEMENT OF NERVOUS INFLUENCE.—By Dr. HENRY KENNEDY.

[The following idea, Dr. Kennedy says, has often forced itself on his attention:]

"There are certain diseased states of the nervous system exactly analogous to those long recognized in the vascular system; and, in many acute diseases, this nervous derangement takes precedence of the vascular derangement"—that is, as there may exist hyperœmia of the one, so may there be in the other, a state in which the nervous influence, whatever its nature be, is in excess; or, as the blood may be deficient or altered in quality from the healthy standard, so likewise may it be in the nervous system. It is my conviction that the full recognition of this idea or principle, if it can be called such, may tend much to simplify the study of many diseases, and more particularly, may help to clear up some questions concerning the treatment of certain affections, about which a considerable difference of opinion still exists. *Dublin Medical Press, April* 19, 1848, *p.* 241.

35.—HINT ON THE TREATMENT OF SCIATICA AND GONORRHŒAL RHEUMATISM.—By G. CORFE, Esq.

It is frequently observed that the most obstinate forms of sciatica on the one hand, or of lumbago and rheumatic pains of the plantar fascia, commonly termed chronic gonorrhœal rheumatism, on the other, resist all the ordinary forms of treatment; colchicum, guaiacum, turpentine, iodide of potassium, extract of stramonium or of conium, Dover's powder, with warm or with vapour baths, are severally exhibited without affording any appreciable relief, when the introduction of a bougie twice or three times a week will reduce the rheumatic swellings, and alleviate, nay, oftentimes completely remove, the disease in question. It has been asserted that this treatment should be adopted only when the rheumatic pains depend upon some stricture along the course of the urethra, and that when this cause of the disease is removed, its effects upon the fibrous tissues of joints generally, or of the sciatic and lumbar nerves especially, are also removed. But such reasoning is wholly opposed to the practice in question.

It is by no means a necessary consequence to gonorrhœal rheumatism of the ankles and plantar fascia, or to an obstinate form of sciatica, that there should exist a urethral stricture; for the counter-irritation produced by the frequent introduction of a bougie, even where no stricture exists, will oftentimes remove, in a few weeks, the most inveterate form of chronic rheumatism which has been under medical treatment for many months. It is undoubtedly true that a neglected stricture near the prostatic portion of the urethra will keep up a severe form of lumbago or of sciatica for months, or even years; but it is equally true that it is by no means an essential feature in the perfect cure of this disease, that there should be any stricture.

I was first taught this valuable point in practice during the years 1826 and 1827, when the gentleman to whom I was apprenticed, Mr. Wm.

Cottes, late of the 5th Dragoon Guards, served the office of Inspecting and Officiating Surgeon to the recruiting depot in Wiltshire. I then found that very many cases of obstinate pains about the plantar fascia, and of sciatica, which might have been supposed to have arisen from long marching in young recruits, were treated successfully by this surgeon, who had seen twenty-one years of active service, by the use of the bougie. The fact of such patients not suffering any inconvenience in micturition forms the main obstacle to the persevering use of this mode of treatment, since it naturally appears to them quite foreign to the cure that such unpleasant, and apparently misplaced remedial measures should be employed as the frequent introduction of a bougie. The plan of treatment, therefore, can only be carried on effectually under such discipline as that which is found in military and naval service, or in that of public hospitals. The intimate sympathy which exists between a diseased urethra and the nerves upon which the kidneys lie will readily explain the frequent combination of disordered urinary secretion, lumbago, &c., with stricture; and if this latter disease remains neglected by the patient, it is oftentimes the fruitful source of disorganization of the kidneys themselves; so that in the majority of fatal cases of stricture, whether by ruptured urethra, diseased bladder, or in those cases of retention which require that the surgeon should cut down upon the stricture to relieve the distended bladder, it is ordinarily found that the kidneys are far advanced in disease, and partially destroyed by the processes of continuous acute inflammation.

Medical Times, Sept. 9, 1848, *p.* 302.

36.—HINTS ON THE DIAGNOSIS OF SCIATICA FROM MORBUS COXARIUS.—By G. Corfe, Esq.

[Mr. Corfe states the following simple method enables us readily to distinguish between sciatica and inflamed or diseased hip-joint, in those cases where difficulty arises.]

Place the thumb of the *right* hand firmly on the great trochanter, and the third finger on the tuberosity of the ischium; then drive the forefinger into the space that exists midway, and a little above, these two points, and if sciatica is present, the patient will certainly wince. The fingers here describe a triangle, the apex of which, whilst it points towards the sacro-iliac symphisis, also rests upon the precise exit of the nerve from the pelvis, and the base is formed by the line from the trochanter to the ischiatic tuberosity. But in order to ascertain if disease of the hip-joint is present, reverse this triangle, and place the thumb of the *left* hand upon the great trochanter, and the third finger upon the tuber ischii, and let the forefinger be driven into the apex of that triangle, of which the two former fingers describe the base, and it will be found to be immediately over the articular surface of the hip-joint, and which will certainly cause pain if inflammation exists in it. It will be observed that the apex of this triangle looks downwards towards the lesser trochanter. These directions apply to the detection of the seat of pain on the left side: but, when the right hip is examined, the hands of the operator should be reversed to the above description. *Med. Times, Sept.* 9, 1848, *p.* 303.

37.—ON THE EFFICIENCY OF ACTIVE EXERCISE IN THE CURE OF NEURALGIA.

[An anonymous writer in the Lancet states that he got rid of a severe facial neuralgia of six months' duration in the following manner. After all remedies had been tried in vain, he one day, during a severe paroxysm, shut himself up in his room, and commenced a vigorous match of fisticuffs with an imaginary opponent. He says,] After a battle of half an hour I was naturally much fatigued, and in a state of profuse perspiration, but the pain was gone. Next day I recommenced my exertions, on the premonitory symptoms appearing, and prevented the attack; and two or three times since I have had occasion to do the same with equal success, using no other medicine all the while, but a frequent glass of generous wine, to keep me in boxing condition, for this remedy is perhaps incompatible with great bodily weakness.

The truth is, that nervous affections are prevented and removed by a great diversity of counter-irritations, or new and superseding actions in the system. It is absurd to talk of quinine as a specific in ague. Twenty years ago I stopped an ague with which I had been long annoyed, by violent horse exercise, taken about the usual time of attack. I had taken bark and arsenic on former occasions for the same disease, with no greater efficacy. In conclusion I have to observe, that between facial rheumatism, neuralgia, and certain species of toothache, there is great sameness of character; and I would strongly recommend my remedy of mental and bodily excitement in all three. Should any of the readers of the Lancet be successful in the application of this principle, I should be glad if he would record his success in its pages. There is, perhaps, nothing very new in the principle. In some medical periodical, the late Dr. Marcet has related a cure he made of severe chronic rheumatism in his own person, by violent and prolonged exercise; and the quick pace about the room of persons affected with toothache, or other sharp pains, would show that this remedy is in some sort instinctive. *Lancet, Aug.* 19, 1848, *p.* 209.

38.—NEW REMEDY FOR TOOTHACHE.

MR. JAMES BEATSON, of Airdrie, says,—Gum copal, when dissolved in chloroform, forms an excellent compound for stuffing the holes of decayed teeth. I have used it very frequently within the last two weeks, and the benefit which my patients have derived from it has been truly astonishing. The application is simple and easy. I clean out the hole, and moisten a little cotton with the solution; I introduce this into the decayed part, and in every instance the relief has been almost instantaneous. The chloroform removes the pain and the gum copal resists the action of the saliva, and, as the application is so agreeable, those who may labour under this dreadful malady would do well to make a trial it.

Medical Times, July 1, 1848, *p.* 145.

ORGANS OF RESPIRATION.

39.—GENERAL CONCLUSIONS RESPECTING TUBERCLE.—BY DR. H. LEBERT, Bex, Switzerland.

[From a series of elaborate researches upon the subject of tuberculosis, Dr. Lebert draws the following inferences.]

1. Every formation which is pathologically different from any other formation manifests this difference even in its determinate microscopical structure.

2. The invariable elements of tubercle are—molecular granules; hyaline ligamentous or connecting matter, and the tubercle-cells peculiar to tubercle, from 0.005 parts of a millimetre to 0.01 part of a millimetre in diameter, irregular in shape, containing in their substance no *nuclei*, but molecular granules. In water, ether, and weak acids they undergo almost no change; in the concentrated alkalis, as *liquor ammoniæ causticus* and *aqua potassæ*, they are completely dissolved.

3. The dimensions of the tubercle-cells are liable to manifold vari-

ations, which however depend neither on differences in organs nor on differences in ages. Tuey are most easily discovered in yellow crude tubercles.

4. Tubercular *corpuscula* are cells left remaining at a low stage of development.

5. The view that tubercular substance is a modification of purulent matter is most decidedly contradicted by microscopical examination.

6. Tubercular *corpuscula* are distinguished from imperfect *pus*-globules by the spherical shape of the latter and by their larger diameter; from perfect *pus*-globules by the *nuclei* appearing in the latter; lastly, from carcinoma-cells distinctly by this character, that the latter are from two to four times as large, and consist of a cell-membrane, of a large distinct *nucleus*, and often even of *nucleoli*.

7. In the softening process in tubercle the connecting matter is fluid; the *corpuscula* are rounded off; their close juxtaposition ceases; they become expanded, and seem to be large. This, however, is not growth, but incipient disintegration.

8. The purulent matter surrounding softened tubercle never has its origin in the tubercle itself, but uniformly in the parts immediately surrounding it.

9. The miscroscope is capable in doubtful cases of distinguishing whether the observer has to do with softened tubercle, or with thickened purulent matter, or with a mixture of the two.

10. Purulent matter appears rapidly to cause the disintegration of tubercular *corpuscula*, and therefore to render them not cognizable in their individuality.

11. While irregularity in outline and compressed mutual aggregation indicate the first stage in the development of tubercle-cells, and mutual softening, expansion, and rounding-off denote the second stage, so the third stage consists in solution. The minute globes are separated into a semifluid granular mass, and lose their individuality.

12. The induration and the calcareous transformation of tubercle is one mode of natural cure. The peculiar tubercular elements are wasted, and are partly absorbed. In their place are substituted small mineral granules, and sometimes crystals of cholesterine. The process of calcareous transformation is usually attended by deposition of colouring matter. According to the chemical analysis of M. T. Boudet, the chief elements found in these calcareous fragments are chloride of sodium and sulphate of soda. Calcareous salts are only in small amount.

13. In tubercles, we specify, as elements not constantly but occasionally present, melanosis as the most frequent admixture; and next to this, fat, fibres, olive-coloured dark globules, and crystals. We find, as only accidentally mingled with tubercles but by no means belonging to their substance, the products of inflammation, as exudation and suppuration, and the elements of epithelium-fragments in multiplied forms.

14. The seat of tubercle in the lungs is usually the elastic cellular tissue of these organs. These bodies are, however, also found secreted in the pulmonic vesicles, and in the capillary or minute bronchial tubes.

15. The pulmonic tissue around tubercles may be sound: but for the most part it is in the state of congestion or of inflammation. The latter morbid process is either lobular or diffused over the greater part of an entire lobe.

16. The purulent matter found surrounding tubercles is often not the consequence of gray hepatization, but proceeds from the mucous membrane of the small bronchial tubes, partly destroyed and opening into the tissue of the lungs.

17. Pneumonia around tubercles possesses nothing specific. We find in it the same elements of exudation, aggregation globules, fat vesicles, purulent *corpuscula*, &c., as in ordinary pneumonia. Tubercular *corpuscula* are found usually not among exudation products.

18. Occasionally there is found around tubercles a peculiar form of chronic inflammation, with yellowish hepatization and with increased consistence in texture. The pulmonic vesicles, the small bronchial tubes, and the pulmonic tissue are filled partly with fibrinous coagula with new fibrinous fomation, partly with aggregate and purulent globules; and amidst chronic hepatization with few vessels, we find vascular acute lobular pneumonia.

19. The degree of consistence of acutely or chronically inflamed lungs depends on the amount of fibrinous matter, fluid blastema, and globules contained. Much fibrinous matter, with little blastema and few globules, produces induration; much fluid blastema with few globules produces softening. Equal proportions of these different elements produce a middle degree of consistence.

20. The lungs rendered compact in consequence of compression from above by pleuritic effusion, often present nowhere any inflammatory phenomena.

21. The gray semi-transparent granulations of the pulmonic tissue contain from the beginning tubercle cells, and are therefore a genuine form of tubercle. Their colouring and transparency is produced partly by the close juxtaposition of the tubercular *corpuscula*, in consequence of uninjured pulmonary fibres, partly by the presence of a large proportion of connecting matter.

22. The gray granulation is not always the termination of the formation of yellow tubercles. The latter is often developed primarily as such.

23. The vascular net-works found around the gray granulations are neither signs of inflammation nor consequences of new formation, but rather effects of the compression of many capillaries by the tubercular deposition and the consequent over-distention of the residual capillary vessels reduced in amount.

24. The notion that gray granulation may be a consequence of inflammation, is contradicted by correct research.

25. The process of ulceration is altogether different from that of suppuration. Thus we find on the mucous membrane of the *bronchi* suppuration without the formation of ulcers, and on the mucous membrane of the intestines, ulcers without suppuration. The last cause of ulceration is effected by inflammation, in consequence of parasitical deposits, occasionally from obliteration of a certain order of capillary vessels produced by causes hitherto unknown.

26. The tubercular ulcer of the lungs is physiologically not different from the tubercular ulcer of the bowels and of the skin.

27. In TUBERCULOSIS, a general ulcerous diathesis is formed, particularly in organs in which tubercles very rarely take place. This is a manifest result of the researches of Louis.

28. The internal fluid layer of the contents of ulcerous cavities of the lungs contains the following elements: 1, tubercular substance, seldom entire, for the most part globules in the process of expansion, or in that of granular dissolution; 2. *pus*-globules, occasionally in smaller amount; 3. puride-globules; 4. aggregation globules; 5. purulent mucus; 6. blood-globules; 7. pulmonary fibres; 8. black colouring matter, or melanotic deposits; 9. epithelial fragments; 10. occasionally crystals; and 11. adipose tissue.

29. Among this thickish fluid are found, for the most part, false membranes, consisting of fibrinous matter enclosing purulent elements.

30. Among the false membranes covering the diseased pulmonic tissue is found a true purulent membrane, consisting of vessels and a fibrous basement membrane enclosing minute globules. This is usually partly destroyed by fresh tubercular eruptions taking place amidst it.

31. This membrane is the result of a healing effort of nature, in order to isolate the ulcerated pulmonic tissue, and thereby to favour its cicatrization.

32. Between the purulent membrane and the pulmonic tissue is often found a layer of newly-formed fibrous tissue.

33. Around the ulcerated cavities deposits of new crude tubercles for the most part take place.

34. The healing of cavities is accomplished, 1st, by the isolating faculty of the purulent membrane, and the contracting circumscription of the cavities; 2d, by deposit of fibrinous matter which fills the cavities, unites with their walls, and thus forms a fibrous cicatrix; and, 3d, by deposition of saline matter in the cavities, and formation of fibrous tissue around them.

35. There are no such formations as *mucus-corpuscula*; what have been described as such are merely *pus-corpuscula* secreted by diseased mucous membranes. Proofs of purulent matter are therefore useless.

36. In the expectoration of phthisical persons are found the following elements: 1. mucus; 2. *pus-corpuscula*, uniformly in larger quantity; these are occasionally found in a shrivelled state, and may then readily occasion error; 3. epithelial fragments in the different forms; 4. granular matter in greater quantity, consisting probably of dissolved tubercular *corpuscula*; 5. small yellow pellicles, portions of false membranes; 6. pulmonary fibres; 7. adipose vesicles; 8. blood-globules, occasionally with fibrinous coagula; 9. aggregation-globules; small infusoria, or vibriones, yet rarely and only accidentally.

37. Proper tubercle-cells are usually not found in the expectoration of phthisical persons. There is, accordingly, no uniform or certain indication by which to distinguish the expectoration of pulmonary consumption from that of other diseases.

38. Pulmonic fibres in the expectoration denote the presence of ulcerated cavity. Their occurrence is, nevertheless, rather exceptional than constant.

39. The greatest part of the expectoration of phthisical patients proceeds not from cavities, but is secreted by the *bronchi*.

40. The abundant secretion of mucus and purulent matter, often taking place from the *bronchi* in pulmonary consumption, is one of the ways which nature strikes out, in order to prevent greater disturbance in the circulation, which would be a necessary consequence of the imperviousness of one set of capillaries, and the over-distension of the rest.

41. One part of the dissolved tubercles of the ulcerated cavities is mingled with the expectoration, another part is absorbed.

42. The law enunciated by Louis, that, after the age of fifteen years, the lungs contain tubercles, if they are found in other organs, is, on the whole, correct. It may, nevertheless, be modified in this manner, that, provided in any other organ a very considerable deposition of tubercles takes place, for instance, in the liver, the kidneys, the *peritonæum*, the lungs often contain few tubercles.

43. In childhood, tubercles in the cerebral membranes, in the glandular system, and in the peritonæum, are more frequent than in adults.

44. The thickening of the *pleura*, from pulmonary tubercles, has its cause, not in inflammation, but in increased nutrition, since it becomes more vascular, in so far as it receives a portion of the pulmonary blood, and therefore becomes a supplemental organ to the circulation through the lungs, and at the same time, by agglutination with the walls of the chest, enlarges the anastatic communications with the large circulation.

45. From embryological and pathological researches, it results that neither around tubercles, nor in the false membranes of the pleura, are new vessels formed independent of the general circulation. Uniformly, new vessels are formed in diseases in the centrifugal direction from the large circulation.

46. The apparent conversion of false membranes into cartilaginous substance, depends only on the fibrousness of compression without secretion of proper cartilaginous elements. In like manner, the so-named ossifica-

tion of false membranes consists only in amorphous deposition of mineral formations.

47. The three chief forms of glandular tubercles are those of the superficial or subcutaneous glands, the bronchial glands, and the mesenteric glands. The last possess least tendency to softening.

48. Tubercular matter is, in the glands throughout, the same as in other organs.

49. The existence of a sensible demonstrable scrofulous matter we cannot admit. That which is regarded as such is either the consequence of ordinary inflammation, or suppuration, under the influence, no doubt, of a discrysial element, yet without peculiar matter, or of inflammation and suppuration, attended by tubercular deposition.

50. Tuberculosis is, in the osseous system, a much rarer disease than observers are disposed at present to allow. Very frequently concrete purulent matter and tubercular matter are in this case confounded with each other. In doubtful cases the microscope alone can establish the diagnosis.

51. From actually scrofulous diseases, which, for the most part, become known by inflammation-products and suppuration, tubercular diseases, on the one side, are to be distinguished, and on the other, chronic idiopathic inflammation of the eyes, of the skin, of the glands, of the bones, of the joints. The last category often in children is alternated with *scrofulosis*.

52. In short, accurate diagnosis and definite conceptions of *scrofulosis* is a desideratum daily more urgently demanded in modern medical practice.

53. The gray granulations in the cerebral membranes, particularly the *pia mater*, show distinctly tubercular *corpuscula* between the fibres of the serous membrane. They further appear in the brain frequently with yellow miliary tubercles, with tubercular infiltration, and also along with large tubercles.

54. In the liver tubercles appear occasionally in very considerable masses, and even with true cavities. These cases are readily confounded with cancer, so far as the medullary fungus of the liver, examined when converted into softening and disintegration, has often an appearance very similar to tubercular deposition.

55. Besides fatty deposition in the liver, fatty degeneration in the heart occasionally takes place in phthisis; consequently a tendency to the deposition of fat in internal organs, while it undergoes wasting in most parts, particularly the external, forms a pathological character of tubercular and other diseases.

56. The kidneys may also be almost quite filled with tubercular deposition. In cases of this class, few tubercles are found in the lungs.

57. In tubercles of the *peritonæum*, we find among the tubercular *corpuscula* many fibres of serous membrane. Tubercles of the *peritonæum* are little disposed to softening. They are, for the most part, accompanied by considerable deposition of colouring matter.

58. *Tuberculosis* of the peritonæum occasionally causes perforation of the intestine, which is for the most part fatal. Yet, in instances of the greatest rarity, by means of the formation of an artificial anus, the preservation of life is still permitted.

59. The consistence of crude intestinal tubercles is normally less firm than that of other organs. In the tubercular ulcers of the intestines no purulent matter is found.

60. The microscopical elements of tubercular intestinal ulcers are, besides the disintegrated tubercle-cells;—cylinder-epithelial fragments, granular disintegrated mucous membrane, and remains of fibres and *fasciculi* of the muscular coat. The new epithelial cells should not be confounded with *pus-corpuscula*.

61. On the morbid intestinal mucous membrane of phthisical persons, we find occasionally polypiform, melanotic, and tubercular excrescences.

62. Tubercles are found, in very rare cases, deposited between the walls of the arteries:—a fact most important in favour of the excretion of tubercles from the blood.

63. In the *pericardium* and in the heart tubercles are found. There are formed, in that case, very extensive adhesions and vascular anastomoses, between the branches of the coronary artery and those of the surface of the lungs;—a remarkable communication between the vessels of the large and the small circulation.

64. Tubercles in the thoracic organs, as well as those in the abdominal organs, may open passages externally, and thus form pulmonary air *fistulæ*, as well as intestinal *fistulæ*.

65. Tubercles and carcinoma do not mutually exclude each other, and therefore do not arrest each other's progress. Both morbid processes may, at the same time, run their several stages of development in the same individual. *Edinburgh Medical and Surgical Journal, July* 1, 1848, *p.* 139.

40.—ON THE USE OF TRISNITRATE OF BISMUTH IN THE DIARRHŒA OF PHTHISIS.—By Dr. Theophilus Thompson, F. R. S., &c.

[This medicine has frequently been found useful in the diarrhœa of phthisis. Dr. Thompson has lately given it in a number of cases, and with excellent results.]

The dose administered was about five grains, three or four times daily, usually combined with a little magnesia and gum arabic. Dr. Thompson has referred to various authors who have written respecting the properties of bismuth, but has not been able to collect from them any evidence of its powers in the phthisical variety of diarrhœa, but he entertains a strong conviction of its peculiar appropriateness to this affection, and has obtained important confirmation of his experience in a recent communication from Dr. Lombard, of Geneva. *Med. Gaz., July* 21, 1848, *p.* 121.

41.—ON THE USE OF COD-LIVER OIL.—By Dr. C. J. B. Williams.

[Dr. Williams has a very favourable opinion of the remedial value of cod-liver oil:]

He considers that fixed oils in general have a solvent power on the fat of tubercle, which may enable them to remove the deposit, if carried into the circulation in sufficient amount; and that the superiority of fish-oils especially depends upon their being more permanently fluid, and less liable to become rancid. He lays great stress on the purity of the oil, as allowing a sufficient quantity to be ingested; and altogether dissents from the opinion of those, who think that the less pure forms of it are more efficacious. Where it can be borne in sufficient doses,—

"It increases rather than impairs the appetite; and, if continued for some weeks or even months, promotes in a marked degree the function of nutrition, increasing the strength as well as the flesh, and giving increment to all the textures. Nor is this surprising when we consider that the nuclei or rudimental molecules of all structures appear to consist of fat, which the oil, in its highly divisible state supplies and renews in the manner most conducive to active and healthy nutrition. Its peculiar fluidity and little proneness to change also enable it to pervade all structures, and to penetrate even into imperfectly organized deposits, and by softening their concrete fatty molecules, and rendering more permeable and supple their whole mass, brings them more under the influence of the adjoining living parts, through the circulation in which either their vitality and nutrition are improved and maintained, or if incapable of improvement they are gradually dissolved and absorbed away.

Such appears to me the mode of operation of the cod-liver oil, assuredly the most efficacious of all medicinal agents in the treatment of cacoplastic and aplastic deposits, and one which, after two years' constant experience in its use, is still frequently surprising me by the wonders that it occasionally works even in aggravated and advanced cases of scrofula, mesenteric disease, pulmonary consumption, chronic pneumonia and pleurisy, and chronic rheumatism.

But no remedy, however beneficial, should lead us to neglect attention to those general and hygienic measures by which the constitutional health is promoted and sustained; or, in other words, the great functions of circulation, respiration, digestion, absorption, and excretion are promoted."

Brit. and For. Med. Chir. Review, July, 1848, p. 150.

ORGANS OF DIGESTION.

42.—ON THE TREATMENT OF APHTHA.—By Dr. C. West.

[Speaking of that form of aphtha which depends upon impaired nutrition of the system generally, and often arises as a consequence of artificial feeding, Dr. West says :]

One point of considerable moment, and to which less care than it deserves is usually paid, is the removing from the mouth, after each time the infant is fed, all remains of the milk or other food which it has taken. For this purpose, whenever the least sign of thrush appears in an infant, the mouth should be carefully wiped out with a piece of soft rag, dipped in a little warm water, every time after food has been given. Supposing the attack to be but slight, this precaution will of itself suffice in many instances to remove all traces of the affection in two or three days. If, however, there be much redness of the mucous membrane of the mouth, or if the aphthous spots be numerous, some medicated topical application is useful.

Various detergents have been recommended, among which the mel boracis, and a mixture of the Armenian bole, with honey are very frequently employed. An objection, however, has been raised to any application into the composition of which honey or other saccharine matters enter, on the ground that the tendency of those substances to pass into a state of fermentation will make them favour rather than prevent the formation of confervæ in the interior of the mouth. Without determining the precise value of this objection, it will yet I think be found that water is the best menstruum for any local application to the mouth. It is my custom to dissolve ℈j.—ʒss. of borax in ℥j. of water, and to direct that after the mouth had been carefully cleansed with warm water, the lotion should be applied to it on a piece of lint or soft linen. In the milder forms of the affection, this borax lotion usually answers every purpose. Should it however, appear insufficient, a solution of gr. v. of the nitrate of silver in ℥j. of distilled water, may be employed in the same way twice a day, while at other times the solution of borax may be used in the manner just directed.

Medical Gazette, May 19, 1848, p. 837.

43.—ON ULCERATIVE STOMATITIS OR NOMA.—By Dr. C. West.

[By this name, Dr. West describes an affection of the mouth, distinct from follicular or aphthous stomatitis on the one hand, and from cancrum oris or gangrenous stomatitis on the other. It attacks the gums, and destroys them extensively by a process, not of gangrene, but of ulceration. It occurs chiefly in children who have had deficient food and have lived in damp, unhealthy places: but is not preceded by any special derangement of the general system. The symptoms are as follows :]

On opening the mouth, the gums are seen to be red, swollen, and spongy, and their edge is covered with a dirty white or greyish pultaceous deposit, on removing which their surface is exposed, raw and bleeding. At first only the front of the gum is thus affected; but as the disease advances, it creeps round between the teeth to their posterior surface, and then, destroying the gum both in front and behind them, leaves them denuded, and very loose in their sockets, but it is not often that they actually fall out. The gums of the incisor teeth are usually first affected; those of the lower jaw more frequently and more extensively than those of the upper; but if the disease be severe, the gums at the side of the mouth become likewise involved, though it is seldom that the two sides suffer equally. Sometimes aphthous ulcers, like those of follicular stomatitis, are seen on the inside of the mouth in connection with this state of the gums; but oftener it exists alone. On those parts of the lips and cheeks, however, which are opposite to, and consequently in contact with, the ulcerated gums, irregular ulcerations form, which are covered with a pultaceous pseudo-membranous deposit, similar to that which exists on the gums themselves. Sometimes, too, deposits of false membrane take place on other parts of the inside of the mouth, the surface beneath being red and spongy, and bleeding, though not distinctly ulcerated. If the disease be severe and long-continued, the tongue assumes a sodden appearance, and is indented by the teeth, and the cheek on one or other side is somewhat swollen, while the saliva, though rather less abundantly secreted than at the commencement of the affection, continues horribly fœtid, and is often streaked with blood, the gums themselves bleeding on the slightest touch. But even if left alone, the affection usually subsides in the course of time, though it may continue almost stationary for days or weeks together, and this notwithstanding that the general health is tolerably good. It would be too much to say, that this unhealthy ulceration never degenerates into gangrene; but though a very large number of cases of ulcerative stomatitis have come under my notice, I have seen only one instance in which it was succeeded by true gangrene of the mouth. When recovery has commenced, the disease ceases to spread; the drivelling of fœtid saliva diminishes; the white pultaceous deposit on the gums, or on the ulcerations of the cheek or lips, becomes less abundant; the ulcers themselves grow less; and finally, the gums become firm, and their edges of a bright red, though still for a long time shewing a disposition to become once more the seat of the ulcerative process, and continuing for a still longer time to cover the teeth but very imperfectly.

Various internal remedies and local applications have been at different times recommended for *the cure of this affection*. Tonics have been much employed, and the supposed analogy between this state of the gums and that which exists in scurvy has led practitioners to give the preference to remedies supposed to be possessed of antiscorbutic properties. Lotions of alum, or burnt alum in substance, or the chloride of lime in powder, have all been used locally with more or less benefit. It was my custom also to prescribe these remedies in cases of ulcerative stomatitis; but since the chlorate of potash was introduced to the notice of the profession by Dr. Hunt, I have learnt to rely upon it almost exclusively. It appears, indeed, almost to deserve the name of a specific in this affection; for a marked improvement seldom fails to be observed in the patient's condition after it has been administered for two or three days, and in a week or ten days the cure is generally complete. Three grains every four hours, dissolved in water, and sweetened, is a sufficient dose for a child three years old, and five grains every four hours is the largest quantity that I have administered to a child eight or nine. If the bowels be constipated, a purgative should be previously administered; but there seems to be no form nor any stage of the affection in which the chlorate of potash is not useful. The diet should be light but nutritious, and quinine and other tonics are sometimes serviceable if the child's health should continue feeble after the local malady has been cured. *Med. Gaz., June 2, 1848, p. 924.*

44.—ON GANGRENOUS STOMATITIS, OR CANCRUM ORIS.—By Dr. C. West.

Ulcerative stomatitis is an affection of such frequent occurrence that many instances of it come under my notice every year, especially during the damp autumnal months; while it is attended with so little danger, that the only case in which I have known it prove fatal was one in which gangrene of the mouth supervened upon it. *Gangrenous stomatitis*, on the other hand, is a disease so rare that I have only five times had the opportunity of witnessing it: but so fatal, that in four out of these five cases the patients died.

[After describing at some length the symptoms of cancrum oris, Dr. West proceeds to the treatment. He says:]

The arrest of the sloughing is the one point to which in the *treatment* of this affection the attention of all practitioners has been directed. The small amount of success which has attended their efforts is partly attributable to the circumstance that the affection has frequently been overlooked, until it has already made considerable progress; in part also to the fact that when recognized, the local remedies employed in order to check the gangrene have either been too mild, or have been applied with too timorous a hand. Unfortunately, too, there is considerable difficulty in applying any caustic effectually to the interior of the mouth,—for not only does the tense and swollen condition of the cheek prevent our obtaining easy access to the gangrenous parts, but the child naturally resists an operation which cannot but occasion it most severe pain. Ineffectual cauterization, however, is useless, or worse than useless; and though every endeavor should be made to prevent the needless destruction of healthy parts, yet of the two evils, that of doing too much is unquestionably less than that of doing too little. It is of importance, moreover, not only that the cauterization should be done effectually, but also that it should be practised early. M. Baron, indeed, speaks of incising the slough in the cheek, and then applying the actual cautery to the part: but I am not aware of any instance in which this suggestion has been acted on with a good result. When once the mortification has extended through the substance of the cheek, the chances of arresting its progress must be very few. As the sloughing advances from within outwards, it is to the interior of the mouth that our remedies must be applied, and since the advance of the disease is too rapid to allow of our trying mild means at first, and afterwards resorting, if necessary, to such as are more powerful, we must employ an agent sufficiently energetic at once to arrest its progress. Various caustics have been recommended for this purpose, but none appear to be so well fitted to accomplish it as the strong hydrochloric or nitric acid. I am accustomed to employ the latter, applying it by means of a bit of sponge, or of soft lint or tow, fastened to a quill, while I endeavor, by means of a spoon or spatula, to guard the tongue, and other healthy parts, as far as possible, from the action of the acid. In the only case that I saw recover, the arrest of the disease appeared to be entirely owing to this agent, and though the alveolar processes of the left side of the lower jaw, from the first molar tooth backwards, died, and exfoliated apparently from having been destroyed by the acid, yet it must be owned that life was cheaply saved even at that cost. Some increase of the swelling of the cheek almost invariably follows the application of this agent— a circumstance which may at first occasion unfounded apprehension lest the disease be worse. Twelve hours, however, must not be allowed to elapse, without the mouth being carefully examined, in order to ascertain whether the disease has really been checked, or whether there is any appearance of mortification in the parts beyond the yellow eschar left by the first application of the acid. The cauterization may now be repeated, if it appears necessary, and even though the disease had seemed completely checked; yet reliance must not be placed on the improvement continuing, but the mouth must be examined every twelve hours, for fear the mortification should spread unobserved. During the whole progress of the case the mouth must be syringed frequently with warm water, or with camomile tea mixed with a small quantity of the solution of chloride of lime, in order to free it from the putrid matters that collect within it, and to diminish as much as possible their offensive odour. Should the case go on well, the frequent repetition of the strong acid will be unnecessary, but the surface may still require its application in a diluted form, or it may suffice to syringe the mouth frequently with a chloride of lime lotion, or to apply the chloride in powder once or twice a day, according to the suggestion of MM. Rilliet and Barthez. In the last two cases of this affection that came under my notice, I likewise employed the chlorate of potash internally, as recommended by Dr. Hunt, but it did not appear to exert any influence over it; and valuable though the remedy is in ulcerative stomatitis, it would, I think, be merely trifling with your patient's chances of recovery to trust to it in true gangrene of the mouth.

During the whole course of treatment you have another indication to fulfil—namely, to support your patient's strength by nutritious diet, and by the employment of wine and other stimulants, and the administration of quinine, or of the extract or tincture of bark, or whatever form of tonic might seem best suited to the peculiarities of the case.

In conclusion let me remind you, that during the whole progress of the case your prognosis must be regulated by the state of the local disease, rather than by the urgency of the general symptoms. So long as the sloughing is unchecked, the affection is tending rapidly to a fatal issue, and this even though the pulse be not very feeble, though the appetite be good, and the child still retain some show of cheerfulness.

Medical Gazette, June 2, 1848, p. 925.

45.—ON GASTRODYNIA.—By Dr. Robert Dick.

[Dr. Dick observes that the term gastrodynia, as also the terms gastralgia and cardialgia, are sometimes used to imply uneasiness in the epicardiac region, when the stomach, if affected at all, is so only in a secondary or subordinate manner. He says—]

There can be little doubt that in not a few cases of epigastric uneasiness the seat of pain is not in the stomach, but probably in the splanchnic nerve, while even yet in the thorax, or where immediately after, having passed the crura of the diaphragm, it forms the semilunar ganglion: still more frequently there is reason to believe that the solar plexus, or the left hepatic plexus, is the seat of pain supposed stomachic. On other occasions the upper part of the pancreas, or the intestinal end of the duodenum, are the probable seats.

In other cases, in which the pain is unquestionably in the stomach, and owing to the presence there of irritating secretions, it may yet happen, and happens, indeed, not rarely, that these secretions are not of stomachic origin, but regurgitations from the duodenum, liver, or pancreas—nay, it is not unlikely, or, at least, impossible, from the first or upper part of the jejunum. Andral mentions cases of a father and son, with severe cardialgia, accompanied by vomiting, caused by fatal disease of the pancreas.

Such being the various possible origins of cardialgia and gastrodynia, it is evident that the treatment must be correspondingly varied. If there is heartburn, with sour eructations, we try at first a simple antacid, as ten or fifteen grains of carbonate of potass, in, if you will, two or three ounces of some aromatic water. If this is not sufficient, and an alterative alkali is indicated, the carbonate of magnesia may be tried. If the tongue is suburral, and its edges red; the breath heavy, hot, and fœtid; the bowels irregular; the urine turbid and high-colored; and the stomachic uneasiness rather dull than acute, but constant—it is presumed that the gastric mucous surface, probably also the duodenal and jejunal mucous membrane, is in the same condition as that of the tongue,—sub-inflammatorily congested. In this case, if the patient is young and plethoric, the treatment is simple. The compound infusion of senna, with the sulphates of magnesia or potash, until the tongue cleans, and the stomach-pain vanishes, are all that is necessary.

The same symptoms may, however, occur in arthritic, and rheumatic subjects and persons considerably past middle life. Here a more cautious treatment is required. The neutral salts are to be avoided. Extract of rhubarb and blue pill must gently correct the secretions, and promote excretion, and the infusion of senna must be combined with that of rhubarb and with tincture of cardamoms, or the compound spirit of horse-radish. To the extract of rhubarb and blue pill I have often seen advantage from the addition of extract of colchicum, in such proportions as two or three grains of rhubarb plus a grain and a half of blue pill and extract of colchicum respectively.

If the cardialgia arises from the ingurgitation of bile, as evinced by extreme nausea, bitterness of taste in the mouth, and bilious retchings, we ought to commence with the induction of vomiting, and thereafter give draughts, composed of decoction or infusion of taraxacum, with sulphate of magnesia. This last measure is, however, only to be resorted to if the stools are pale and inefficient, and the hepatic region full and tender; for in this case we must presume that the hepatic veins are congested, and require to be stimulated to evacuate their contents. But if, along with bilious vomiting, there are bilious stools, the treatment, after the emetic, should consist of little else than diluents. If the bile be freely and spontaneously discharging itself, there is no use in exasperating the obviously already excited liver by purgatives.

If the cardialgia is flatulent, draughts or a mixture, composed of four or six drachms of the compound tincture of ammonia, and of the tincture of assafœtida, respectively, with six or eight ounces of the compound infusion of senna, will dispel the cause.

The cardialgia of pregnancy has no cure but parturition. That which is owing to interrupted menses or suppressed hæmorrhoids, long established, must be treated by leeches applied to the anus or groins, by hot pediluvia, and by sufficient and prudent purging. The cardialgia of old subjects, if plainly traceable to suppressed hæmorrhoids, must be treated promptly. Aloes must be given in the purgative, and stimulant suppositories inserted.

Perhaps the two last kinds of cardialgia ought more properly to be considered as cases of gastrodynia or gastralgia, to a brief notice of which we now proceed.

We have stated (arbitrarily it may be, yet convenient for practice,) the distinction between cardialgia on the one hand and gastrodynia or gastralgia on the other, to consist in the former being attended with more or less inflammatory irritation of the mucous membrane and deranged secretions; the latter to consist simply of a neuralgia, in which the tongue, secretions, and excretions, need not be, and very frequently are not, deranged. In short, we suppose gastrodynia to be a local idiopathic neuralgia, the very symptom of which is pain, and for which there is no appreciable or very probable cause.

In such cases the treatment must depend on the temperament, sex, and age of the patient. For example, in exsanguine subjects we would give bark and iron; or iron and some aromatic powder, without sedatives or narcotics: in plethoric subjects, especially if young, we would order restricted diet and drink; seidlitz powders largely diluted; or, if accessible, seltzer or Vichy water. In cases neither decidedly exsanguine or the reverse, we would order sedatives or narcotics, now with, and now without the addition of vegetable or mineral tonics. Thus one case might require the various preparations of opium, or hyoscyamus, or conium, or aconite alone, or belladonna, stramonium cannabis indica, or hydrocyanic acid; another would require one or other of these, combined it might be, with quinine or chiretta; a third might require the narcotics or sedatives in conjunction with metallic tonics, as nitrate or oxide of silver; sulphate or carbonate of iron; sulphate or oxide of zinc; sulphate or ammonia-sulphate of copper; the trisnitrate of bismuth, or the cyanuret of gold.

I have very often met with cases in which gastrodynia was due to smouldering gout; a fit of which at once accounted for and relieved the stomachic neuralgia. In cases in which we suspect the arthritic diathesis, the cautious administration of extract of colchicum, along with extract of rhubarb and blue pill, of which combination doses of five grains are taken twice or thrice a day, will often relieve the gastrodynia, and it is to be presumed, avert an attack of gout, the *first* appearance of which is always, if possible, to be prevented, though after it *has* appeared, it is sometimes prudent or necessary to invite its attack.

Lancet, June 10, 1848, *p.* 638.

46.—EMPLOYMENT OF NUX VOMICA IN HABITUAL CONSTIPATION.—By

E. Boult, Esq., Assistant Surgeon to the Bath Eye Hospital.

[Observing a recommendation of the extract of nux vomica, in habitual costiveness, Mr. Boult was led to give the alcoholic extract in doses of half a grain thrice a day, to patients of costive habit, with but slight effect. He says:—]

I was then led to add the same quantity of the extract (half a grain) to a pill containing aloes, rhubarb, and scammony, and was surprised at the result. I found that this drug has the power of increasing very sensibly the activity of purgative medicines. I ascertained that an aperient scarcely sufficient by itself to produce a single evacuation, when combined with this extract, caused active purgation. The dose must be varied according to the patient's idiosyncracy, but, generally speaking, a pill, containing three quarters of a grain of Barbadoes aloes, three quarters of a grain of extract of rhubarb, and half a grain of the extract of nux vomica, (Pharmacopœia Edinensis,) if taken at bed-time, will produce one, or, perhaps, two full evacuations the following morning. The addition of a single grain of calomel to this pill will cause two or three *bilious* motions, thus shewing that the drug possesses not only the property of stimulating the muscular fibres of the bowel, but also the power of increasing the activity of medicines that affect the secretions.

Dr. Christison says, speaking of strychnine, that "it is not a cumulative poison, like mercury or digitalis; on the other hand, its activity does not diminish, like that of opium, under the influence of habit." The first of these assertions may be questioned, the second would appear to be true. I have prescribed the pills already mentioned nightly for months together, and at the end of the time the effect has been produced as certainly as at first, and no bad consequences have arisen, no disposition to hæmorrhoids has been set up, and all tendency to cumulation has been carried off with the evacuations; they are indeed remarkably comfortable in their mode of operation, and so far from injuring the tone of the digestive apparatus, I think it will be found that when the medicine is discontinued, the disposition to costiveness will be found lessened. It would be interesting to ascertain how far the exhibition of nux vomica can modify the effect of medicines of a different kind; I have occasionally employed it in combination with quinine, but I am not prepared to say what extent of modification or increased activity has resulted.

There is nothing novel in the combination of tonics with purgatives, which is especially indicated for children of atonic habits. By this means the operation of the purgative is rendered more active, and more persistent if the medicine be continued. Mastich, we know has the property of increasing the powers of aloes, when given in combination; this is said by Pereira and others to be the result of a more minute division of the aloetic particles, which the mastich favours; but I have seen no combination produce anything like those marked effects which have been mentioned as resulting from the employment of nux vomica.

There is an observation to be made with regard to the employment of this medicine, in order to prevent disappointment to those using it. It is essential that the extract should be *good*. Alcoholic extracts are troublesome and expensive to make; this preparation is particularly so, and consequently the common article of commerce is not always to be depended upon. *Prov. Med. and Surg. Jour.*, *May* 17, 1848, *p.* 260.

47.—ON SOME FORMS OF DIARRHŒA.—By Dr. J. F. Duncan, Assistant Physician to Mercer's Hospital, Dublin.

[After mentioning the varieties of diarrhœa, Dr. Duncan refers particularly to that form of complaint which is attended with tenesmes and frequent inclination to go to stool, rather than great discharges. The disease being protracted, loss of health and spirits, anxiety, sleelesspness, and hectic supervene. Dr. Duncan observes:—]

The whole of this train of symptoms may depend upon some irritation within the rectum, a small ulcer or a bleeding pile whose presence is scarcely recognized by the patient himself, and of which, perhaps, he has never been questioned by his medical attendant. When the exciting cause has been discovered, the treatment is not difficult, and it is astonishing how soon, under such circumstances, the diarrhœa is arrested, and the patient's health and spirits re-established. The occurrence of diarrhœa from such a cause can be best understood by a consideration of the properties of mucous membranes in general.

Let us take the intestinal tube as an example. Intended as this naturally is, for the constant transmission of substances of very different materials and action, nature has wisely guarded the mucous membrane in a state of health with an insensibility to the stimulating effect of whatever is passing over it at the time. Were it not so, the act of digestion would be attended with continual pain. To compensate in some measure for this want of feeling, which might at times be attended with disadvantage, and to give warning whenever matters are in the tube, whose presence is attended with danger or inconvenience, there has been substituted a curious property whereby these impressions become matters of sensation at the *orifices* of the tube. In this way we explain the itching at the anus which results from the presence of ascarides in the rectum; the habit of picking at the nose in children afflicted with tænia; the desire to go to stool when the bowels are distended with fæces, &c. Even the inferences which we are in the habit of drawing from an examination of the tongue seem to be founded upon this principle, that the portion of the alimentary canal which is obvious to the senses, by a peculiar sympathy with parts that are remote, reflects the varying changes that are taking place there. Nor is this confined to the mucous membrane of the digestive tube. In the genito-urinary system we find a calculus in the bladder producing irritation at the orifice of the urethra, and the act of coughing is produced in the lungs from a similar irritation within the bronchial tubes.

A full consideration of the subject, then, leads at once to the conclusion that irritation within the rectum, like the irritation in the gums produced by dentition, excites an extensive sympathy throughout the entire tube, and naturally tends to diarrhœa as one of its occasional consequences. In every case, therefore, of protracted diarrhœa, in which a careful examination of a patient's state fails to detect an adequate cause for the disease elsewhere, the attention of the practitioner should be directed to the rectum with a view to ascertain its real state, and remove any local irritation that may exist in it.

[There is nothing of more consequence when we treat a case of diarrhœa, than examination of the stools: aud one of the most important points to be ascertained by the examination, is the presence or absence of bile in the dejections. If the evacuations are bilious, opium may be given with safety, and will indeed form an essential part of the treatment. Dr. Duncan thinks that opium acts in these cases by diminishing the secretions which flow into the canal, rather than by lessening the peristaltic action of the bowels itself. And it is on account of this property, that of diminishing the secretions, that opium will be injurious if given when there is a deficiency of bile in the stools. Dr. Duncan says,]

This leads me to notice the propriety of using strychine in those cases which present the features I have just alluded to—of absence or deficiency of bile in the evacuations. Of course I do not allude to this remedy as appropriate to the acute period of the attack. Most, if not all, of these cases commence as ordinary dysentery, and require to be treated as such, by bleeding, leeching, mercurial preparations, &c.; but after the febrile stage has passed away, you will find the diarrhœa remaining, with whitish stools, general relaxation, prostration of strength, &c.; and here you will find strychnine an admirable remedy. It was first introduced to public notice in this capacity by Dr. Bardsley of Manchester, in his Hospital Facts and Observations, in 1817; and subsequently you will find a case detailed by Dr. Graves, in the third volume of the Dublin Hospital Reports, precisely in point. It began as ordinary dysentery, and degenerated into chronic diarrhœa, with white or chylous evacuations, which yielded to strychnine, after having resisted a variety of other agents. But neither of these gentlemen appear to me to have explained the precise cases to which the remedy is suited, nor the principles upon which it acts. In whatever point of view you regard it, strychnine is the direct antagonist to opium. If opium numbs the sensibility, strychnine exalts it; if opium produces sleep, strychnine excites to wakefulness; if opium impairs muscular contractility, strychnine induces spasms; if opium arrests secretion, strychnine promotes it. The augmented sensibility that results from strychnine is shown distinctly by the susceptibility to external impressions that patients under its influence manifest; the slightest motion of his person, the shaking of the floor from the mere act of crossing the room, the agitation of the air in the chamber by raising the bed-clothes, are all sufficient to throw his whole frame into violent convulsions at such a time. But it is especially from its effect in promoting secretion that it deserves our attention at present. I do not know that this property has been generally ascribed to it, but I can state that in two cases of chronic diarrhœa of the kind described that I had under my care in this hospital last summer, and which recovered—one perfectly, and the other for a time, till a fresh exposure to cold induced dropsy, under which he was labouring at the time I resigned charge of the wards—the change in the character of the evacuations was one of the earliest effects produced. From being white they became feculent, consistent, and full of bile; and whenever in such a case this change occurs, depend upon it you have discovered the true method of cure. Until feculent discharges are procured, the morbid state cannot be considered at an end, even though the patient's sufferings are mitigated, and the unnatural frequency of calls to stool removed. That the action of strychnine is to be explained in the manner now pointed out, and not, as many suppose, by its inducing a spasm of the muscular fibres of the alimentary canal, which interferes with their action, appears plain both from the fact that the bowels in the cases referred to continued open, though the number of evacuations gradually diminished, and from the circumstance that no evidence of spastic action in any other part of the muscular system could be detected.

Dublin Medical Press, May 3, 1848, p. 273.

48.—CASES OF DIARRHŒA TREATED BY MURIATE OF BARYTES.—By Dr. A. Walsh.

[Dr. Walsh relates several cases of dysentery in the chronic stage treated by muriate of barytes. We select one: that of a man, 22 years old, who had evacuations every ten or fifteen minutes, attended with great pain, thirst, dry tongue, and quick pulse. He gave the following]

History.—Said he was seized with fever in July, 1847. He relapsed twice, and after last relapse he was attacked with bowel complaint, for which he was under every variety of treatment in hospital without benefit, and was discharged. I ordered wine and arrow-root, with the following medicine:—Muriate barytes, one grain; muriate morphia, three grains, made into twelve pills, one to be taken three times each day.

Monday, 11th: three days since first report. His bowels were affected only once during the night, three times in the morning, and of a more natural consistence; the pain much relieved, but still caused by wind in his bowels; tongue moist; thirst much abated; sleeps better; says he is greatly relieved.—Continue the pills as before; wine and arrow-root.

Saturday, five days later. Bowels were moved once this morning, once in the night, and once before going to bed; no pain before or after motion, and what passed was nearly natural; pulse 96, soft; tongue moist; says that he is much stronger.—Continue pills as before; wine and arrow-root.

Wednesday, 20th: four days later. Bowels quite regular from Sunday till last night, when he took a large drink of cold spring water, which acted on him as a strong purgative; his bowels were affected eight times during the night, but not at all in the morning.—Repeat pills as before.

I did not see this patient from last report until Nov. 17th, when he came into my study, and he was so altered for the better that I did not recognize him; he said he continued quite well from the last time I saw him, but that his eyes had got weak, and hindered him from working.

Dublin Medical Press, May 24, 1848, *p.* 322.

49.—ON THE USE OF PERSESQUI-NITRATE OF IRON IN DIARRHŒA.—By Wm. Kerr, Esq.

[Mr. Kerr states that the persesqui-nitrate of iron is a remedy of great power in most cases of chronic diarrhœa, and in this way likely to be useful as a means of preventing cholera. He says:]

After an experience of eighteen years, I can confidently recommend the persesqui-nitrate of iron as capable of curing most cases of chronic diarrhœa. The instances which do not yield to it are those where there is reason to believe ulceration of the mucous membrane exists. It is therefore generally inapplicable in chronic dysentery, or the diarrhœa of phthisis, which, instead of checking, it aggravates. There are besides some other cases not reducible under any general rule, which are not improved by the persesqui-nitrate of iron; but I am satisfied that the great majority of cases unaccompanied by ulceration, are curable by this medicine. If my readers take the trouble of examining the original papers, they will find a considerable number of cases cured by it, and if they prescribe it to their patients, I have no doubt that they will soon have many proofs in their own experience.

Dr. Graves states that he has lately used the persesqui-nitrate of iron with very considerable success. He proceeds to say, that "you will be consulted by females of a very delicate and weakly habit, who frequently exhibit symptoms of nervous derangement, such as palpitations, sleeplessness, and headache, who are easily excited or alarmed, have a tendency to emaciation and paleness, and have little or no appetite. Combined with these general symptoms, you find that they have been labouring under diarrhœa for weeks, and even months, and that this, with other causes of debility, has rendered their condition extremely uncomfortable. You will also be informed by the patient that she has tried many remedies without benefit, and that she is extremely anxious to have something done to give relief; and hence it is a matter of importance to be acquainted with any remedy which may be likely to prove serviceable. This form of diarrhœa is of an unmanageable character, and very seldom amenable to the ordinary modes of treatment. The common astringent remedies totally fail; chalk mixture, kino, rhatany root, and catechu are useless, and in such cases it has been observed that opium is generally injurious. If you prescribe opium, it certainly checks the disease for a time; but this temporary relief is accompanied by debility, malaise, restlessness, and many uneasy symptoms, and the diarrhœa soon returns and is as bad as ever. The medicine which I have found most effectual in such cases is the persesqui-nitrate of iron. With it I have succeeded in curing many cases which have been exceedingly obstinate, and of very considerable duration, the disease having, in one instance, resisted all the efforts of medical skill for seven months, and in the other for two years. Seven or eight drops of the liq. ferri persesquinitratis, increased gradually to twelve or fifteen in the course of the day, was the quantity prescribed in both cases. In the course of four days a slight diminution of the diarrhœa was perceived, in a fortnight the patient felt much better, and in a month or five weeks it had disappeared altogether. This took place without being followed by any bad effects; there was no swelling in the stomach, no tympanitis, no tormina, no restlessness, or nervous derangement: the patients recovered their health and strength, and the cure was at once safe and permanent."

Cases have occurred to myself where the disease has existed many years, yet were perfectly cured in a surprisingly short time from the use of the persesqui-nitrate of iron. A great deal of ill health frequently proceeds from chronic diarrhœa. Epilepsy and hysteria, for instance, often exist together with a long-continued relaxed state of the bowels, and do not yield till a remedy is obtained for the diarrhœa. I have seen these and other diseases cured chiefly in consequence of the persesqui-nitrate of iron checking the accompanying diarrhœa.

Dr. Neligan says, that "the persesqui-nitrate of iron is an admirable astringent, possessing, also, tonic properties. It will be found particularly useful in chronic cases of mucous diarrhœa, when there is much emaciation and loss of appetite. In such cases, I have derived much benefit from its employment after many other remedies had failed."

In some cases, where the ordinary doses (fifteen to thirty drops) thrice a day aggravated the diarrhœa, I have succeeded by giving for some time smaller doses, such as five drops twice or thrice a day, gradually increasing the dose as the patient was able to bear it. In a few cases of the same kind, the persesqui-nitrate has been given in pretty large doses by enema. I have already said, that it is generally inapplicable in phthisis. In my paper in the Edinburgh Medical Journal, there is a striking instance of a lady, in the last stage of phthisis, having diarrhœa stopped by enemata containing this medicine. Intestinal ulcerations, if they existed, were probably beyond the reach of the enemata. Mr. Tindal, of Glasgow, informs me of a case of phthisis, where, after the failure of many remedies, the diarrhœa uniformly ceased on the patient using the persesqui-nitrate of iron. These, however, are exceptions, and the rule is as I have stated.

All remedies which have yet been recommended for cholera have disappointed the expectations formed of them, and this circumstance ought to raise more highly the value of preventives. The contagion of cholera seems to differ from that of small-pox and scarlatina—in this respect, that these diseases seize individuals in perfect health, who have not been subjected to any cause injurious to health besides contagion. Whereas, judging at least from my own observation, a person might live unharmed in a cholera hospital, if his digestion be good, and his bowels firm; if he paid strict attention to avoid fatigue, to enjoy sufficient sleep; if he kept himself comfortably warm both by day and by night; and if he took care to avoid surfeits and intemperance. No instructions, no admonitions, will ever cause the unthinking part of the population to attend to their health, and when cholera arrives, it will cut down its thousands among them. The thinking and virtuous portion will undoubtedly, from contiguity, be placed in danger, though by strict attention to health, they may escape with comparative impunity. But individuals are placed in perilous circumstances if their digestion be easily deranged, and their bowels usually relaxed. According to the evidence already given, the ordinary remedies are in very many instances inadequate. It is here, therefore, that the persesqui-nitrate of iron is valuable by improving digestion and curing diarrhœa. Before the last invasion of cholera, I paid strict attention to the health of my different patients; and, wherever relaxation of the bowels existed, cases which are more numerous than would readily be suspected, the persesqui-nitrate of iron was prescribed. I found numerous instances of chronic diarrhœa of such lengthened continuance, that the patients, having frequently tested the inefficacy of the usual remedies, had long abandoned all hope of cure. The persesqui-nitrate of iron was generally successful, and I do not recollect of one of the individuals thus cured being afterwards seized with cholera. I trust that the importance of this subject is apparent. During the last epidemic, remedies for the disease were eagerly sought after; in the coming, unless some brilliant discovery be made, I apprehend that more attention will be paid to preventives.

In making the solution of the persesqui-nitrate of iron, I now employ the following formula, which differs in a few respects from the original in the Edinburgh Medical and Surgical Journal.—Take of iron wire (that sold under the name of No. 17), one ounce; nitric acid three ounces by measure; water, fifty-seven ounces; muriatic acid, one drachm. Mix the nitric acid with fifteen ounces of water (in very warm weather the quantity of water may be somewhat greater, and in cold weather somewhat less) in an earthenware vessel capable of holding three or four times this quantity. Put into this dilute acid the iron wire broken into a number of pieces, and so twisted as to extend into every portion of the liquid. Cover the vessel lightly, and set it aside. In eight to twelve hours the process is completed, when the solution is to be poured off the undissolved wire, and the remainder of the water, together with the muriatic acid, added, to make up the whole to sixty ounces (thirty in the original formula).

In this process there must be a slight excess of wire (say thirty grains) to insure the combination of the whole of the acid. A great excess, if allowed to remain long in the liquid, would convert it into the protonitrate. When properly prepared, the solution of the persesqui-nitrate of iron has a dark red colour, like that of dark brandy; and carbonate of soda produces a red precipitate, unmixed with any tinge of green. The taste is very astringent. The large quantity of water, and the free muriatic acid, are for the purpose of keeping the solution long transparent. In cold weather, two or three months will elapse before it becomes muddy.

Dublin Medical Press, May 24, 1848, *p.* 330.

50.—ON THE DIARRHŒA OF CHILDREN.—By Dr. C. West.

[When diarrhœa comes on in connexion with teething, scarification of the gums is not necessarily to be practised: on the contrary, it should only be performed when some spot upon the gums is very tense and swollen. To relieve febrile excitement, the use of the tepid bath once or twice a day is serviceable. As to medicines, Dr. West tells us—]

I usually employ in these cases small doses of ipecacuanha, in combination with an alkali; and think that I have found great benefit from this plan. Three or four drops of liquor potassæ, and the same quantity of vinum ipecacuanhæ, mixed with mucilage, and given in a little milk about every four hours, is the dose for an infant a twelvemonth old. At the same time a powder of one grain of Dover's powder, and one of the mercury and chalk, may be given every night, after the child is taken out of the warm bath, and will often be found to procure for the little patient, previously restless and fretful, some hours of quiet repose. If the child should appear much exhausted, a slight stimulant, such as four or five drops of the spirit of nitrous ether, may be advantageously combined with each dose of the mixture; and in all cases of simple diarrhœa, it behooves us to watch most carefully against the powers becoming too much depressed, either by the profuseness of the purging or by its continuance.

Supposing in any case that a considerable degree of looseness of the bowels were to continue after the lapse of two or three days, astringents must be resorted to; and I know of none better than the extract of logwood, in combination with tincture of catechu. Five grains of the former and ten minims of the latter, three times a day, in some sweetened aromatic water, is a suitable dose for an infant a year old. The logwood, moreover, is something besides a mere astringent; it is a very valuable tonic in all cases where gastro-intestinal disorder has existed; and it is one which children take readily. It is, however, not very popular in the nursery, because it imparts to the evacuations a deep pink colour, which leaves an indelible stain upon the napkins: a circumstance which it is as well to mention when you prescribe the medicine. The mercury and chalk and Dover's powder may be still continued at bed-time, if the evacuations, though less frequent, be still slimy and unhealthy. If either the evacuations or the infant's breath have a sour smell, three grains of the sesqui-carbonate of soda may be added to each dose of the mixture; or, if the child be not wholly fed at the breast, a drachm of prepared chalk may be stirred up with each pint of milk given to it, and after the powder has been allowed to settle, enough will still remain suspended in the fluid to counteract any slight acidity in the alimentary canal. If, after the bowels have become quite regular, some tonic should still be required, the extract of bark, with small doses of the tincture, will be one of the best that could be given. You will observe that all the remedies mentioned occupy but a very small compass: a point the importance of which is never to be forgotten in prescribing for children.

But there are cases which wear a much more serious aspect than those the treatment of which we have hitherto considered. Even in true *inflammatory diarrhœa*, however, depletion is but seldom needed, for either the abdominal tenderness is inconsiderable, or, if the attack set in with great severity, it will be generally found to have occasioned so much depression of the powers of the system as to contraindicate the abstraction of blood. Still, in cases of recent date, when the abdominal tenderness is considerable, and when it is associated with much heat of skin and febrile disturbance, a few leeches may be applied in either iliac region. The child should be carefully watched for some hours afterwards, in order to prevent any excessive loss of blood; since considerable hæmorrhage not infrequently follows the application of leeches to the abdomen, and it is not always very easily arrested. In the majority of instances the pain and tenderness of the abdomen are much relieved by the application of a large hot bran poultice; the frequent renewal of which often affords great comfort to the child.

If the irritability of the stomach be not so great as to prevent its administration, no medicine is of such general application, or of such essential service in these cases, as a mixture containing a small quantity of castor oil diffused in mucilage, with the addition of a few drops of tincture of opium. I was led to use this medicine in the inflammatory diarrhœa of children from observing the great benefit which followed its employment by my friend Dr. Baly in the treatment of dysentery among the prisoners in Millbank Penitentiary. The following is the form in which I should prescribe it for an infant a year old, and in which it is taken by most children very readily:—℞. Ol. Ricini, ʒj.; Pulv. Acaciæ ℈j.; Syrupi Simpl. ʒj.;

Træ. Opii, ♏iv.; Aquæ Flor. Aurant. ℥vij. M. ft. mist. A teaspoonful to be given every four hours.

Although this medicine may relieve all the symptoms considerably, and although the general state of the child may be much improved, yet it sometimes happens that a considerable degree both of tenesmus and of purging continue. These symptoms will now be more effectually relieved by an opiate enema than by any other means. Four drops of laudanum will form an enema of sufficient strength for an infant a year old; and this should be given suspended in half an ounce of mucilage, since a more bulky injection is almost sure to be immediately expelled. Supposing the symptoms not to yield to these means, or that the case presented from the first a great degree of severity, small doses of hyd. c. creta and Dover's powder may be given every four hours, in addition to the castor oil mixture, which, however, should now be given without the laudanum.

Med. Gaz., July, 14, 1848, *p.* 47.

51.—ON THE USE OF NITRATE OF SILVER INJECTIONS IN DYSENTERY.—

By W. Garlike, Esq., Rickmansworth.

[Mr. Garlike thinks that injections may with advantage be used more generally than they have hitherto been, for the purpose of restoring tone to the capillaries of the mucous membrane of the large intestine, before ulceration or gangrene has taken place. He relates, in favour of this practice, the case of a child four years old, who had had symptoms of dysentery for three days. At this time, Mr. Garlike tells us,]

I gave an injection containing two grains of the argenti nitras with 10♏. of laudanum in an ounce and a half of thin mucilage, at twelve A.M. The administration produced considerable pain, but the effect was most satisfactory: the tenesmus, which had been distressing, was soothed, and the bowels did not act again until ten A.M. the following day, being a period of ten hours, when a disposition to irritability again manifested itself, blood and pus still continuing to pass. I therefore repeated the injection, and prescribed decoct. cinchonæ, nitric acid, and tinct. opii. Bowels not relieved again for twenty-four hours, when feculent matter passed; still some blood. Gave another injection, and from this time the case progressed favorably, but slowly, to a state of health.

On the 24th, case 1, which had remained stationary, evinced symptoms of an acute character, similar to those before described; the bowels were purged several times in rapid succession, and bloody sponges constituted the chief feature of each. The general appearance of the boy was distressing to a degree: face pale; features collapsed; pulse scarcely perceptible; feet and legs cold, with slight tenderness over the abdomen. For these symptoms I administered an injection as before, and applied a large blister sprinkled with camphor and opium over the bowels, to remain on six hours.

25. Bowels not relieved.

26. Passed a feculent motion free from blood. Ordered decoct. cinchonæ, nitric acid, with hyd. c. creta and Dover's powder, aa. gr. iij. every night, with half a grain of opium added. From this time the case gradually progressed to convalescence.

The others were cases of troublesome chronic diarrhœa, and here the result was alike successful. In these cases it would appear that the large intestine was the primary seat of ulceration; hence the advantages of topical treatment, and the decided effect produced by the nitrate, when all the other popular astringents failed, speaks loudly in favor of its employment in cases of a similar kind; and, should experience prove it as useful generally in those chronic forms of diarrhœa so perplexing to the practitioner as I have found it in the few cases in which I have employed it, it will be a valuable adjunct to our present list of remedies. In all the different statements given of the treatment of Asiatic cholera, most writers appear to agree in the importance of checking the enormous demand made on the animal powers, by the copious discharge of serum from the bowels, and to suggest a variety of astringent formulæ for injections. Would not the nitrate be useful in these cases? It would appear to me justly worth a trial.

Medical Times, May 27, 1848, p. 57.

52.—ON THE USE OF ASTRINGENTS IN DYSENTERY.—By Dr. D. Donovan, Skibbereen.

Astringents given by the mouth are very useful in controlling the profuse diarrhœa that accompanies chronic dysentery. I have tried the vegetable and mineral medicines of this class upon a large scale, and have decidedly found more benefit from the decoction of logwood, in conjunction with laudanum, as recommended by Dr. Stokes, than from all others put together. Astringent enemata also produce a very good effect in cases where there are profuse discharges without pain. I have tried them composed of acetate of lead, nitrate of silver, &c., and have seen more good done by enemata of sulphate of alum with tincture of opium, than any others: and Dr. Parkes, in his remarks on the hepatitis and dysentery of India, says—"That in the adynamic form, alum, combined with catechu and camphor, is the best treatment."

Dublin Medical Press, May 3, 1848, p. 278.

53.—CASE OF DYSENTERY TREATED BY INJECTIONS OF NITRATE OF SILVER.

[A female, 45 years old, was brought to the Hopital Necker, suffering from dysentery of five days' duration The symptoms had been much ameliorated by the use of opium and other remedies, but the evacuations were still seven or eight in the day, consisting chiefly of bloody mucus, and accompanied by severe pain.]

The following injection was ordered:—Crystallized nitrate of silver, 25 grammes; distilled water, 200 grammes; to be used in the following manner:—After each injection of the solution, another injection of about 300 grammes of tepid water immediately to be given, in order that the nitrate may be conveyed high up into the intestine, and come in contact with a larger extent of surface.

The next day the amelioration was remarkable. There had been three stools which contained much less of the bloody mucus. There was considerable tenesmus. After four days' treatment, the stools became perfectly normal. They contained more mucus, but little tinged with blood. There was only one stool daily, which was not attended with pain. During convalescence, and in consequence of some error of duty, the diarrhœa occasionally returned, the stools being tinged with blood, but without any appearance of mucus: it was, however, always immediately controlled by the injection of the nitrate of silver, followed the next day by a simple injection of starch; and the patient eventually quitted the hospital quite well.

This case not only shows the efficacy of nitrate of silver enemata, but also how they may be used with perfect safety; which fact, for a considerable period, had been denied. A strong solution of the salt has been injected into the rectum and colon, without producing the least accident, either immediately or consecutively. It acts upon the mucous membrane of the parts as it acts upon the lining membrane of the urethra, or the conjunctiva, or upon any other mucus lining to which it is applied.

Medical Times, Oct. 23, 1848, p. 386.

54.—ON TABES MESENTERICA, AND CHRONIC PERITONITIS IN CHILDREN.

—By Dr. C. West.

[Chronic peritonitis, so often a fatal disease in children, differs from acute inflammation of the peritoneum, not only in its tardy progress, but in being almost invariably associated with the tuberculous cachexia. Dr. West gives us the following account of the pathology of this disease.]

The *bodies of children who have died of this affection* are usually found to be exceedingly emaciated, and their face retains after death the suffering expression which it has worn during their protracted illness. The lungs and bronchial glands contain tubercle in greater or less abundance, and the pulmonary disease is sometimes so far advanced as to have obviously had no small share in bringing about the fatal event. On dividing the abdominal parietes, long slender cellular adhesions are often found connecting the peritoneum to the subjacent viscera. The intestines, too, are found connected by adhesions, some of which are very easily broken down, while others are so firm that the coats of the bowels give way in the attempt to separate them. This difference does not depend on the age of the adhesions, (although in this respect they vary greatly, some being apparently of very recent date, others of long-standing,) so much as on their nature. Those connections which are formed by the mere effusion of lymph, even when from age they have acquired considerable firmness, can generally be broken down without much difficulty; and at any rate the attempt will not produce any rupture of the intestines. When, however, different portions of the bowels are matted together so inseparably that it is easier to lacerate than to detach them from each other, it will be found that something more than the mere effusion of lymph has produced this union. It will be seen to have been effected by means of a yellow granular matter, like that which connects the opposite surfaces of the arachnoid in a case of tubercular hydrocephalus, and made up like it in part of lymph, in part of tubercular deposits. Adhesions are thus formed between the opposite surfaces of peritoneum, at first of small extent, but fresh deposits of tubercle soon take place in the vicinity, and the attendant inflammatory process unites together a still greater extent of intestine. Nor is this all; but in time the tubercle thus deposited undergoes a process of softening, in the course of which the muscular tissue of the intestines becomes destroyed, and their mucous membrane may thus eventually be perforated, so that distant parts of the intestinal canal, which at first were merely adherent together, are sometimes brought by this means into direct communication with each other. The abdomen generally contains a small quantity of transparent serum, but if, as sometimes happens, life should have been cut short by the supervention of acute peritonitis upon the old disease, the effusion may be of a puriform or sero-purulent character.

In addition to the evidences of inflammatory action presented by the peritoneum, that membrane and the various abdominal viscera are the seat of a more or less generally diffused tubercular deposit. The surface of the peritoneum lining the abdominal walls is sometimes abundantly beset with small, grey, semi-transparent granulations; but in the majority of cases the tuberculization is less general, and the parietal peritoneum is less affected than other parts of the membrane. That part of the peritoneum which lines the diaphragm, or the abdominal walls in the vicinity of the spleen, is one of the favourite seats of tubercular depost, which in these situations generally assumes the form of small yellow miliary tubercles, not that of grey granulations. In some instances the omentum is the seat of the chief tubercular deposit: and though it usually assumes the miliary form, yet now and then masses of crude tubercle of considerable size are met with in this situation. The peritoneum covering the liver and spleen seldom fails to show an abundandant deposit of tubercle; and tubercles usually abound in the substance of the latter organ. The mesenteric glands likewise are tuberculous, though the degree of their degenerevery four hours, is the dose for an infant a twelvemonth old. At the same time a powder of one grain of Dover's powder, and one of the mercury and chalk, may be given every night, after the child is taken out of the warm bath, and will often be found to procure for the little patient, previously restless and fretful, some hours of quiet repose. If the child should appear much exhausted, a slight stimulant, such as four or five drops of the spirit of nitrous ether, may be advantageously combined with each dose of the mixture; and in all cases of simple diarrhœa, it behooves us to watch most carefully against the powers becoming too much depressed, either by the profuseness of the purging or by its continuance.

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—By Dr. C. West.

[Chronic peritonitis, so often a fatal disease in children, differs from acute inflammation of the peritoneum, not only in its tardy progress, but in being almost invariably associated with the tuberculous cachexia. Dr. West gives us the following account of the pathology of this disease.]

The *bodies of children who have died of this affection* are usually found to be exceedingly emaciated, and their face retains after death the suffering expression which it has worn during their protracted illness. The lungs and bronchial glands contain tubercle in greater or less abundance, and the pulmonary disease is sometimes so far advanced as to have obviously had no small share in bringing about the fatal event. On dividing the abdominal parietes, long slender cellular adhesions are often found connecting the peritoneum to the subjacent viscera. The intestines, too, are found connected by adhesions, some of which are very easily broken down, while others are so firm that the coats of the bowels give way in the attempt to separate them. This difference does not depend on the age of the adhesions, (although in this respect they vary greatly, some being apparently of very recent date, others of long-standing,) so much as on their nature. Those connections which are formed by the mere effusion of lymph, even when from age they have acquired considerable firmness, can generally be broken down without much difficulty; and at any rate the attempt will not produce any rupture of the intestines. When, however, different portions of the bowels are matted together so inseparably that it is easier to lacerate than to detach them from each other, it will be found that something more than the mere effusion of lymph has produced this union. It will be seen to have been effected by means of a yellow granular matter, like that which connects the opposite surfaces of the arachnoid in a case of tubercular hydrocephalus, and made up like it in part of lymph, in part of tubercular deposits. Adhesions are thus formed between the opposite surfaces of peritoneum, at first of small extent, but fresh deposits of tubercle soon take place in the vicinity, and the attendant inflammatory process unites together a still greater extent of intestine. Nor is this all; but in time the tubercle thus deposited undergoes a process of softening, in the course of which the muscular tissue of the intestines becomes destroyed, and their mucous membrane may thus eventually be perforated, so that distant parts of the intestinal canal, which at first were merely adherent together, are sometimes brought by this means into direct communication with each other. The abdomen generally contains a small quantity of transparent serum, but if, as sometimes happens, life should have been cut short by the supervention of acute peritonitis upon the old disease, the effusion may be of a puriform or sero-purulent character.

In addition to the evidences of inflammatory action presented by the peritoneum, that membrane and the various abdominal viscera are the seat of a more or less generally diffused tubercular deposit. The surface of the peritoneum lining the abdominal walls is sometimes abundantly beset with small, grey, semi-transparent granulations; but in the majority of cases the tuberculization is less general, and the parietal peritoneum is less affected than other parts of the membrane. That part of the peritoneum which lines the diaphragm, or the abdominal walls in the vicinity of the spleen, is one of the favourite seats of tubercular depost, which in these situations generally assumes the form of small yellow miliary tubercles, not that of grey granulations. In some instances the omentum is the seat of the chief tubercular deposit; and though it usually assumes the miliary form, yet now and then masses of crude tubercle of considerable size are met with in this situation. The peritoneum covering the liver and spleen seldom fails to show an abundandant deposit of tubercle; and tubercles usually abound in the substance of the latter organ. The mesenteric glands likewise are tuberculous, though the degree of their degeneration, and the size which they have in consequence attained, vary much in different cases. The same remark holds good with reference to the amount of tubercular disease in the interior of the intestines, which, though in many cases very considerable, yet bears no invariable relation either to the degree of the affection of the peritoneum, or to that of the mesenteric glands.

[The occasional attacks of pain in the abdomen which form a prominent symptom of this disease, may or may not be preceded by vague indications of decaying health. But, however this may be, it is not long before the appetite fails or becomes capricious, the bowels become irregular, and the motions unnatural, and thirst and feverishness set in. Occasionally the stomach is irritable, but the tongue is usually clean throughout the disease. The abdomen soon becomes large, tense, and tympanitic, and manipulation of it occasions uneasiness, or severe pain. As the disease proceeds, through pauses seem to take place in its progress, the symptoms increase in severity.]

The child loses flesh; the face grows pale and sallow, and anxous; the skin becomes habitually dry, and hotter than natural, and the pulse is permanently accelerated. The abdomen does not grow progessively larger, but it becomes more and more tense, although its tension varies without any evident cause, and sometimes disappears for a day or two, to return again as causelessly as it disappeared. When the tension is diminished, the abdomen yields a solid and doughy sensation, and the union between the contents of the abdomen and the abdominal walls become very perceptible. The superficial abdominal veins now become enlarged in many instances, and the skin grows rough, and looks as if it were dirty. The pain in the bowels retains the same colicky character as before, but it returns very frequently, and sometimes exceedingly severe, while the child is never free from a sense of uneasiness. The tenderness of the abdomen, however, but seldom increases in proportion to the increase of pain. The bowels are in general habitually relaxed, though the degree of the diarrhœa, as well as the severity of the abdominal pain, vary much in different cases. As the disease advances, the child becomes confined to bed, and is at length reduced to a state of extreme weakness and emaciation. Death is often hastened by the concomitant affection of the lungs; but should this not be the case, the patient may continue for many weeks in the same condition, till life is destroyed, after a day or two of increased suffering, by by some renewed attack of peritoneal inflammation.

[These symptoms much resemble those usually enumerated as characteristic of *tabes mesenterica*, which is not surprising, since both diseases are the result of the tubercular cachexia, both are seated in the abdomen, and both are attended by an impairment of the functions of nutrition. Indeed, disease of the mesenteric glands was formerly considered the almost exclusive cause of the atrophy of children; and an enlarged belly was supposed to be the almost infallible sign that such disease was in progress; but this is by no means the case. Upon the subject of tuberculization of these glands, Dr. West observes:]

The mere presence of tubercle in the mesentery is, it must be owned, of very common occurrence, since MM. Rilliet and Barthez met with it in nearly half of all children in whom that morbid deposit existed in some or other of their viscera. But though the existence of tubercle in the glands be thus frequent, its presence in any considerable quantity is extremely rare, since, according to the same authorities, it was found in abundance only in one out of every sixteen children, some of whose organs contained tubercle.

The general character of tuberculous mesenteric glands is much the same with that of tuberculous bronchial glands, but the former are usually surrounded by a more delicate cyst; and although their size seldom exceeds that of a chesnut, yet they occasionally undergo a degree of development which far exceeds that of tuberculous bronchial glands, and three or four of them coalescing together, sometimes form a mass as big as the fist, or even bigger.

The effects produced even by an advanced degree of tuberculization of the mesenteric glands are smaller than might be anticipated, and much smaller than those which result from a considerably less amount of disease of the bronchial glands. Nor will this at all surprise us, if we bear in mind the difference between their anatomical relations. The bronchial glands are not merely situated in a cavity which is bounded by comparatively unyielding parietes, but the viscera with which they are in contact are solid and resisting, and they are, moreover, adherent to the trachea and the larger air-tubes, so that any increase of their size is sure to produce compression of parts whose functions are of vital importance. The mesenteric glands, on the contrary, are contained in a cavity whose yielding walls allow them to increase readily in size, while the loose attachments of the mesentery still further permit them to attain even to considerable dimensions, without their pressing on any viscus, so that it is an exceedingly unusual occurrence for them to cause the perforation of any part of the intestines, or even for them to contract adhesions to their exterior.

To these causes it must be attributed that there is no *symptom* pathognomonic of tubercle of the mesenteric glands, except their being perceptible through the abdominal parietes. This, however, they never are during the early stage of the affection. In its earlier stages, no symptoms at all are present, or only the indications of that general tuberculous disease of which the affection of the mesentery is usually but a subordinate part. At a later period, when the disorder of the digestive organs attracts attention, the symptoms are generally much the same with those of chronic peritonitis, save that, if the peritoneum be free from disease, the abdomen is in most cases both less tense and less tender.

[As to the treatment of chronic peritonitis and tabes mesenterica, Dr. West says,]

In each of these affections two periods may be distinguished. During the first, while our diagnosis is still uncertain, general principles guide our conduct, and lead us to subject the child to the same dietetic and hygienic management as we should adopt, if we feared the approach of any other form of phthisis. In the second period, the advancing mischief has removed all doubt from our minds, but at the same time has chased all hope from our spirits; and we now minister to symptoms as they arise, and try to mitigate sufferings which we cannot cure.

The dyspeptic symptoms, the unhealthy appearance of the evacuations, and the frequency with which diarrhœa occurs, enforce the necessity for the diet being as mild and unstimulating as possible. The abdominal pain which is experienced in tubercular peritonitis is almost always relieved by the application of a few leeches; but even local depletion must not be practised without absolute necessity; and in many instances a large poultice to the abdomen, frequently renewed, will remove pain, the severity of which had seemed at first to call for the abstraction of blood. The logwood and catechu mixture is one of the best astringents that can be employed to check the over-action of the bowels. Sulphate of iron and opium, in the form either of pills or mixture, may be used if the diarrhœa be very obstinate, though we may be compelled to abandon their use, from finding that they aggravate the patient's symptoms; but I have not observed the mere suppression of the diarrhœa by astringents to be followed by any exacerbation of the other abdominal symptoms. Astringents, however, are far from being the only remedies to be employed; but mercurials in a mild form, and continued for a long period, have often seemed to be of much service. When the tenderness of the abdomen has been sufficiently relieved to admit of it, I generally direct the use of a liniment twice a day, consisting of the linimentum hydrargyri, soap liniment, and olive oil, in equal parts, which has seemed useful as counter-irritant even independent of the mercury, which enters into its composition; besides which I give equal parts of the hydr. c. creta and Dover's powder once or twice a day. The Dover's powder prevents the mercurial from irritating the bowels, and also allays the restlessness and feverishness at night—an end to which the use of the tepid bath every evening likewise conduces, often in an eminent degree. The comfort of the child is often much promoted by wearing a well-adapted flannel bandage over the abdomen both by night as well as by day, and the support it affords may be increased with advantage by a piece of thin whalebone at either side.

If diarrhœa be absent, or if, though it be present in a slight degree, the the skin be very hot and dry, and the child very thirsty and feverish, the tepid bath, the mercurial with Dover's powder, and small doses of liquor potassæ and ipecacuanha, are remedies on which I chiefly rely, and to this the extract of dandelion may often be added with advantage. If it seem likely that a mild tonic will be borne, a mixture containing the extract of dandelion, extract of sarsaparilla, and sesquicarbonate of soda, may be given: or the liquor cinchonæ or the infusion of calumba may be employed for the same purpose. It is only with much caution that we can administer chalybeates in these cases, and after having found that the milder vegetable tonics are well borne. The ferro-citrate of quinine, or the citrate of iron, are the preparations which it will generally be desirable to employ in the first instance, and even their effect should be watched attentively. In conclusion, I need hardly mention the importance of change of air, and the benefits likely to result from a sojourn on the sea coast; for you know how much more powerful nature's remedies are in diseases of this kind than the remedies of man's devising. *Medical Gazette*, *July* 21, 1848, *p.* 101.

56.—ON THE TREATMENT OF WORMS IN CHILDREN.—By Dr. C. West.

[The symptoms said to indicate the presence of worms, are most of them, Dr. West remarks, of small value; and nothing short of seeing the worms can be regarded as affording conclusive evidence of their existence. When, however, the symptoms usually enumerated continue with varying severity for several weeks together, we have reasonable ground for suspecting the presence of worms, and, as Dr. West observes:]

Fortunately the *treatment* which the general symptoms would lead us to adopt will be in great measure such as, if worms exist, will prove most efficacious in producing their expulsion. The capricious appetite will induce us to regulate the diet with care; the disordered and generally constipated state of the bowels will lead to the employment of alteratives, and to the occasional administration of brisk cathartics; while the absence of febrile symptoms will probably seem to warrant the employment of some of the preparations of iron. These remedies will in many instances not have been continued long before the appearance of worms in the motions encourages us to persevere in the same treatment. The combination of ferruginous preparations with active purgatives, is a plan especially effective in cases where the lumbricoid entozoa are present, and is likewise of much service in getting rid of the ascarides which inhabit the rectum, and in preventing their reproduction. The latter worms, however, need to be assailed in their habitation; and, from the circumstance of their living in the lower end of the rectum, this is a sufficiently easy task. Enemata of lime-water usually answer the purpose of destroying them; but, should they fail, the addition of some two drachms of the muriated tincture of iron to the clyster is tolerably sure to make it effective. In young children these ascarides sometimes not merely occasion much itching and distressing irritation about the anus, but even produce a troublesome diarrhœa, attended with considerable tenesmus. Under such circumstances, the lime-water injection should be administered daily for two or three days together; while, at the same time, small doses of the castor-oil mixture every six or eight hours will soothe the irritation of the bowels. In female children these ascarides sometimes creep up the vulva, and not merely cause much irritation there, but sometimes excite a leucorrhœal discharge, which ceases on the expulsion of the worms.

The alarming symptoms of cerebral disturbance which have sometimes been produced by worms in the intestinal canal, have resulted more frequently from the presence of the round worm than of other varieties of these entozoa. This, however, is not always the case; and in the only instance that has come under my observation in which the occurrence of convulsions seemed clearly traceable to the presence of worms in the intestines, the small thread-worms were the cause of the symptoms. Apart from the knowledge which we have in many of these cases that the child had previously been afflicted with worms, there is nothing in the symptoms which could enable us at once to distinguish between convulsions from this cause and those which result from some other source of irritation of the nervous system. In most instances, however, the child has passed worms frequently before the cerebral symptoms made their appearance, and not improbably was under treatment for the destruction of these parasites at the time when the nervous symptoms supervened. Even though this be not the case, the constipated state of the bowels which is almost sure to have preceded the occurrence of the convulsions, indicates the employment of active purgatives—remedies which in most instances remove together these symptoms and their cause, although convulsions apparently induced by the presence of worms have sometimes had a fatal termination.

The tænia is, as was stated, much less common in childhood than after puberty; and in the few cases in which I have met with it during early life, I have been reluctant to try that heroic remedy, turpentine and castor oil, which is so serviceable in procuring the expulsion of tape-worm in the adult. I have been accustomed to employ the decoction of the bark of the pomegranate root in ℥j. doses three times a day to a child of seven years old, interrupting its administration twice in the week, in order to give a purgative of scammony and calomel. Under this plan, pursued for several weeks together, large quantities of the worm have been voided, and the children have appeared entirely freed from this very troublesome parasite. I have not yet made trial of the administration of a dose of the decoction or powder of the pomegranate bark every hour for four or five successive hours, as recommended by Mr. Breton,* who brought the remedy into notice in this country. I purpose, however, making a trial of this method on the next occasion that may offer, since the effects of the remedy, when thus administered, appear to be surer, as well as more speedy, than when it is given at longer intervals. *Medical Gazette, July* 28, 1848, *p.* 133.

56.—ON THE TREATMENT OF WORMS BY SANTONINE.—By S. T. WELLS, Esq., Surgeon, R.N.

[Santonine, the new remedy which Mr. Wells introduces to our notice, is, he states, in general use as a vermifuge, in the hospitals at Corfu. It is prepared from the Artemisia Santonica; portions of the peduncles and undeveloped flowers of which plant are sold in this country as worm-seed.]

The plant is abundant in the Levant and along the northern shores of Africa, and is much used as a vermifuge in those countries and in many parts of Europe. From ten to thirty grains are generally given in substance, mixed with sugar or milk; the dose being repeated at short intervals, and followed by a purgative. The effects, as might be expected, are uncertain, but the evident power of the herb led to an examination into the nature of its active principle. A resinous extract and essential oil were obtained, and more lately, the salt which is the subject of the present communication.

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* Medico-Chirurgical Transactions, vol. xi, p. 301.

[The seeds of the santonica are used in the preparation of the salt. When pure, the santonine is in the form of brilliant white crystals, volatile, inodorous, and insipid; sparingly soluble in water, more soluble in ether, alcohol, turpentine, or olive oil. As to its medicinal use, Mr. Wells says,]

The experience of medical men with whom I have conversed, and my own observation, have convinced me that this salt would be a most valuable addition to our Pharmacopœia. Many think its effects more certain upon lumbrici than upon tænia, but I have found it equally efficacious in both. The dose for an adult is from five to eight grains, and for a child from two to four, given as a powder in sugar or preserve, at bed-time, and washed down by a glass of water. In many cases the worms are passed on the following morning, but not unfrequently it is necessary to give a second dose on the succeeding evening. I have not yet found more than the second dose required. In Corfu it is usual to combine the santonine with a moderate dose of calomel, and to follow it up by a saline aperient; but I have not done so, as I thought the trials of the real power of the salt itself would thus become less satisfactory. Very little griping is produced, and the worm is passed dead. If the dose exceed five grains in an adult, a curious effect upon the retina is produced—the patient, for an hour or more, occasionally seeing all objects tinted green or yellow, as though he was looking through coloured spectacles. No visible change in the eye can be detected in such cases. In two persons I have seen the urine very highly coloured for a few hours. The men to whom I administered it were strong seamen or marines, and some of them, who had previously taken turpentine on different occasions, said they thought the new medicine equally or more effectual, far less unpleasant to take, and less painful in operation. Forming a small and almost tasteless powder, it is peculiarly adapted to children.

The price I paid in Corfu and Naples was about a guinea an ounce; but as the herb from which the salt is prepared is common and cheap, I should think a considerable reduction of price might be made. I trust our pharmacologists will direct their attention to the subject, as I feel confident that the santonine would be generally found to be a convenient, painless, and effectual anthelmintic. *Medical Gazette, June 16, 1848, p. 1035.*

URINARY ORGANS.

57.—PATHOLOGY OF THE KIDNEY.—By Dr. W. T. Gairdner.

[Dr. Gairdner has written a series of articles in the Monthly Journal on "the Pathology of the kidney," from which we extract the following conclusions:—]

1. By far the greater part of the pathological lesions of the kidney arise from, or are connected with, the exudation of oleo-albuminous granules into the interior of the tubes and epithelial cells.

2. The oleo-albuminous exudation is probably often preceded, and certainly occasionally accompanied, by vascular congestion; but when the quantity of exudation is considerable, more or less complete depletion of the vascular system invariably occurs. This is a secondary result of the obstruction of the *tubuli uriniferi*.

3. The oleo-albuminous exudation occurs in two chief forms; viz., *first*, Universal infiltration of the tubes throughout the organ; and, *second*, Infiltration of particular sets of tubules, the rest remaining free, or nearly so. In the latter mode arise the granulations of Bright.

4. There is no essential anatomical difference between the exudations in

the kidney which are the result of chronic processes, and those which have been considered as the result of inflammation.

5. The capillary vessels of the kidney are subject to spontaneous obliteration (unaccompanied in the first instance by any visible lesion of the tubes,) giving rise to the peculiar affection which I have called the *waxy degeneration*. This obliteration of the vessels is probably in all cases preceded by a state of congestion.

6. The consequence of the waxy degeneration is thickening and varicose dilatation of the tubuli throughout the organ.

7. The tubes of the kidney are subject to contraction and obliteration, in consequence of the desquamation of their epithelium; a condition resulting in atrophy, and complete disorganization of the organ.

8. The desquamation of the epithelium occurs very frequently in all the other diseased conditions of the kidney. When sufficiently long-continued and extensive, it produces contraction, and this indifferently whether exudation be present or not. It is sometimes accompanied by vascular congestion in every stage of its progress.

9. The earlier stages of the exudations can only be discovered by means of the microscope. The progress of the waxy degeneration, on the contrary, is best traced by the unaided eye. The desquamation of the epithelium is only to be discovered with certainty by means of the microscope, and is particularly apt to escape attention, under all circumstances, if the *kidney* only, and not the *urine*, be looked to. It results that careful investigation, both by the microscope and the naked eye, both of the kidney after death and the urine during life, are indispensable to enable the pathologist to determine with exactitude the presence or absence of disease.

Monthly Journal, *Aug.* 18, 1848, p. 108.

58.—INFLUENCE OF DIET ON THE URINE.—By Dr. Garrod.

[The following remarks on this subject are founded on the experiments of Lehmann, which were performed on himself.]

1. *On ordinary Diet, with amount of Fluid only sufficient to allay Thirst.*—The average amount of urea excreted in twenty-four hours was found to be nearly 500 grains, and of uric acid, about 18.3 grains, and therefore the relation of the uric acid to the urea was one to twenty-seven.

2. *On a purely animal diet, sometimes on eggs only.*—The urine was then found to become much paler in colour, larger in amount, of a higher specific gravity, 1027, and the addition of nitric acid caused the formation of crystals of the nitrate of urea, re-action very acid. The mean amount of urea excreted in twenty-four hours was then 819 grains, and of uric acid, 22.6 grains, so that although there was a slight absolute increase of the latter body, yet the ratio between it and the urea was actually diminished, being only about as one to thirty-six. This result is interesting, and contrary to a very common opinion, as showing that in the healthy organism the assimilation of a large amount of animal food does not increase the uric acid. During an animal diet, also, the amount of phosphates, especially those with an alkaline base, become greatly increased, although the amount taken in with the food were diminished; this is owing to the oxidation of the phosphates contained in the protein compounds. The same remark applies to the sulphates, the acid of which is chiefly derived from the albuminous matters.

3. *On a vegetable diet.*—The urine then becomes of a yellowish-brown colour, faint odour, acid in its re-action, and sometimes deposited crystals of uric acid. The amount is decreased, the specific gravity remaining much the same as when on an animal diet—viz., 1027.5, the amount of solids is decreased, so also the urea, but not the uric acid. The urea

amounted to 346.5, the uric acid to 15.7, so that the ratio of the uric acid to the urea becomes absolutely increased—viz., as one to twenty-two.

4. *On a non-nitrogenised diet.*—The food then consisted of amylaceous principles, as sugar, starch, and gum, together with oleaginous bodies, as almond oil. The urine became brownish red, slightly acid, but having considerable tendency to become alkaline. The experiments were only performed for two days after the commencement, as the health became affected; the quantity of urine was not affected, but the total solids suffered considerable diminution, the urea on the second day being reduced to 285 grains, and on the third to 190 grains, whilst the uric acid on the second day was 13 grains, on the third, nine grains; the phosphates and sulphates were also diminished. These last results would have been more satisfactory could the non-azotized diet have been continued, because it probably requires two or three days for the effects of the previous diet to pass off, and, therefore, we only get approximations to the results which would follow the want of nitrogenized nutriment. In the following table is seen, at one view, the total mean quantities of urea and uric acid, and total solids passed during twenty-four hours, when under the influence of the different diets, expressed in grains :—

	Mixed diet.	Animal.	Vegetable.	Non-azotized.
Solids ...	... 1047	... 1350	... 915	... 643
Urea ...	... 500	... 816	... 346	... 238
Uric acid	... 18	... 23	... 16	... 11

Lancet, Nov. 4, 1848, p. 494.

59.—ON EXCESS AND DEFICIENCY OF UREA IN THE URINE.—By Dr. Prout, F.R.S., &c.

From long experience, Dr. Prout considers excess of urea as comparatively a rare disease; for, (he says,) where I have seen one decided case of an excess of urea in adults, I have seen twenty cases of diabetes. There is reason, however, to believe that this unusual occurrence of the disease is more apparent than real, and that, in a great variety of instances, patients do not apply for medical advice till the complaint has merged into diabetes or some other disease, to which it often constitutes the transitive step. That the disease, if permitted to proceed unchecked, or if injudiciously treated, passes into diabetes or some other formidable disease (perhaps the disease to be next considered), I have the strongest presumptive evidence, both from observation and analogy.

The treatment should be both dietetic and medicinal. The diet should be light and nutritious, but neither irritating nor stimulating. It should consist principally of animal and farinaceous matters; and, if accustomed to fermented liquors, the patient may be allowed a small quantity of generous wine or sound porter. All diluent and diuretic fluid should be carefully avoided, and the thirst, which is generally urgent, should not be quenched by drinking largely, which would only aggravate the disease. Moderate exercise, as walking or riding, will prove useful, but anything like fatigue, mental or bodily, will be hurtful. The following observations on the treatment are judicious and deserving of notice :—

From the various forms which this disease assumes in different individuals, no plan of medical treatment can be laid down that will be found strictly applicable in all instances. The great principle to be kept in view is to do no harm by rough treatment. Calomel pills, black doses, and saline purgatives are calculated to do infinite mischief, and will probably render a manageable disease perfectly unmanageable. Hence, though the use of purgatives and alteratives is often indicated and even necessary, more especially in the earlier stages of the disease, they must be employed with caution, and their effects carefully watched. In both forms of the disease, and particularly in the second, sedatives are usually required, and of these opium is the chief. With the sedatives may be conjoined such tonics as seem to be suited to the individual habit; and as the complaint recedes, and the health becomes re-established, the sedatives may be gradually withdrawn. Such are the principles of the treatment I have usually found most beneficial; the details, of course, must be suited to the circumstances, according to the judgment of the practitioner.

Excess of urea in the urine is often associated or complicated with various other affections, which, of themselves, would never lead to the inference of such a morbid or unnatural state of the urine. Independent of its connection with certain urinary conditions, its been observed to be associated with epilepsy and other nervous affections; and we, ourselves, have observed it in connection with certain forms of hysteria and nervousness, approaching, though not amounting quite, to insanity. Such secondary complications, if they may be so called, present an obstinacy of character more apparent than real; for if the urine be attended to, and its unnatural condition removed, epilepsies, hysteria, and many nervous affections, previously unassailable, readily give way. We, therefore, fully concur in the views of Dr. P., as expressed in the following passage:—"Hence in whatever circumstances an excess of urea in the urine may be found to occur, whether as denoting a peculiar state of disease, or as complicated with more urgent derangements, it is always a symptom of such importance that it ought to be known to the physician, who, if he has duly studied its pathology, will generally be able to apply his knowledge, either directly or indirectly to the patient's advantage."

Having considered excess of urea, Dr. Prout next proceeds to the consideration of those affections in which deficiency of urea is the more prominent characteristic. A deficiency of urea frequently gives rise to various anomlous symptoms which often puzzle and perplex the practitioner. Urea is a product of the secondary assimilation, and may be looked upon as the effete and useless, or perhaps injurious, elements of the decomposed tissues, modified or converted into a principle suited to elimination and evacuation from the system through the kidneys, as the most appropriate outlets. If, then, urea, or its equivalent, carbonate of ammonia, be not secreted and eliminated, the blood will probably become deteriorated, and exert a deleterious if not poisonous influence upon the system, and, it is probable, that there is no state of existence compatible with life in which urea or its equivalent, carbonate of ammonia, does not exist in the urine. This, in fact, is in accordance with our own experience, as no specimen of recent urine which we have ever examined was found entirely destitute of urea, or, what amounts to the same thing, carbonate of ammonia. Indeed, we hardly think it possible for life to continue beyond a few seconds if the urea were not voided; and it is by no means impossible but that certain apparently apoplectic seizures, terminating fatally, but which on dissection, disclose none of the morbid phenomena, may be really instances death from the circulation of the blood poisoned with urea. But although the complete absence of urea, or some other equivalent principle, from the urine is possibly compatible with life, there are often instances in which the quantity is very much less than natural. Thus, "there are several forms of disease, both adults and in children, in which the proportion of urea is not only absolutely but relatively less than in healthy urine; and though these forms of disease are rarely of that distinct character as to be pronounced idiopathic, and, in fact, are often referable to other forms of urinary disease, yet it may not be deemed superfluous to bring together under one head, and in a summary form, a few of the more remarkable of these forms of disease."

One of the most prominent characters, however, is *diuresis*. With, perhaps, but very few exceptions, we mostly find diuresis to a greater or less extent, a symptom; and the diseases are found to present features varying somewhat as they occur in adults and in young children. Deficiency of urea accompanied by diuresis in adults, Dr. P., observes may be considered under the heads of *diuresis intermittens and diuresis continua*. Perhaps the nearest approach to a total absence of urea, occurs in hysteria. Hysterical diuresis, however, is only occasional; and in the intervals the urine passed frequently contains a much larger proportion of urea than natural. The peculiar characters of hysterical urine are, a very low specific gravity, sometimes as low as that of spring water. It is limpid, odourless, colourless, and nearly devoid of sensible properties of every kind; but this is only in the very diluted state in which it is passed, for, if it be concentrated by evaporation, it develops both sensible odour and colour, and affords chemical evidence of saline principles, and even of urea. This urine very soon putrefies and acquires a smell like cabbage-water; becomes opaque and deposits crystals of triple phosphate, especially in warm weather.

Urine of these sensible characters is not confined to hysterical females. It may also be remarked, observes Dr. P., that many nervous individuals who cannot be said to be hysteric, or to be subject to urinary disease, often pass large quantities of limpid urine on exposure to cold and to various other exciting influences; but such urine generally differs from hysteric urine in being only *very dilute* healthy urine, while in hysteric urine the relative proportions of the ingredients are always deranged.—The two forms, however, often run into each other so imperceptibly as to render distinction almost impossible. The intermittent diuresis so often connected with mental emotions does not occur in young children. The treatment is that for hysteria generally, and needs no detail.

In deficiency of urea, with diuresis, there are generally constitutional symptoms, but of almost every variety of character. The most constant are "great thirst, a dry state of the skin, and usually a constipated state of the bowels. In most cases there is an uneasy sensation referable to the stomach, accompanied by a morbid craving for food; at other times this sensation merges into nausea, and there is a perfect indifference to solid matters, which are almost immediately ejected by vomiting. There are also more or less of emaciation, depression of spirits, and great muscular debility, wtth all their consequences.

The causes seem to be enveloped in considerable obscurity. The disease, as already stated, seems to be in general associated with a *nervous* temperament, which has caused it "to have been viewed in the light of a perpetual state of hysteria." But this cannot be trusted as a correct view.—"According to my own observation," says Prout, "which seems to agree with that of others, the present form of diuresis occurs in both sexes, and at different ages, though it seems to be more frequent in women, and in both sexes, about the middle period of life. Sometimes, as already stated, it appears to be the natural consequence of the form of diuresis connected with an excess of urea. At other times it cannot be referred to any distinct cause. My belief is, that it is often connected with, or leads to, incipient disease of the kidneys; and, if this opinion be correct, it may occasionally pass into one or other of the forms of disease to be considered in the next section."

We certainly think, from our own experience, that the disease is very often not only the concomitant, but even the forerunner of disease of the kidney, especially that form connected with albuminuria, usually known as Bright's disease. There is often also, in addition to organic disease of the kidney, a similar condition of the neck of the bladder, and which, probably, may be the cause of the diuresis. The morbid anatomy has, upon several occasions, furnished good grounds for such views. The urine, too, in these cases, is often alkalescent, or even slightly serous.

The disease is not only obstinate, and mostly very unmanageable, but often ends in dropsical effusion of some kind, or in coma. "Diuresis, with a deficiency of urea, from its deep-seated character, is generally a disease of great obstinacy, and yields with difficulty to medical treatment; even when for a time it appears to give way, it is apt to return from the slightest cause. As one of the most frequent terminations of the affection seems to be disease of the kidneys and its consequences, this form of affection generally proves fatal from dropsical effusion or coma."

Hence must appear the importance of examining into the properties of the urine when diuresis to any extent, otherwise unintelligible, prevails. In cases of apparently an anomalous description, the practitioner should ascertain the condition of the urine, with respect to urea, and determine whether this principle be remarkably deficient or not. Nor is it any answer that the disease being incurable, and hardly ever to be mitigated by remedies, renders the knowledge of its nature useless. If we remain ignorant of the nature of the disease under treatment, we can never hope to improve our practice.

The treatment offers a most difficult problem, and indeed, hardly to be solved. Much of the treatment has been explained in the therapeutical history of diabetes, and, therefore, needs no comment here. "One of the first principles to be attended to, is, as much as possible, to restrain the patient from drinking; for, if he be allowed to drink *ad libitum*, it is in vain to hope for benefit from any plan of treatment. Another point to be kept in view is to promote cutaneous action. For this purpose the vapour bath and friction, assisted by the internal use of Dover's powder, antimony, &c., or, if the patient's circumstances admit, removal to a warm climate, will be found highly serviceable. Tonics of every kind usually disappoint our hopes; and the more active tonics especially often increase the thirst. As in diabetes, I have seen more benefit derived from the means above stated, joined to the use of sound porter and a system of diet chiefly consisting of animal and farinaceous matters, than from any other means."

The bowels should be kept regular, but active purgation avoided. According to Dr. P., "Active purgatives for a time, indeed, divert the fluids to the bowels, and the urine consequently is diminished in quantity; but, as soon as the effects of the purgatives cease, the diuresis returns in an aggravated form." But the varieties of form assumed by this disease in different individuals, seem to preclude the notion of any specific plan of treatment.

Medical Times, Aug. 26, 1848, p. 278.

59.—UREA IN THE PERSPIRATION.

Dr. Landerer, Professor of Chemistry at Athens, has just discovered a considerable quantity of urea in the perspiration. After having soaked in water a piece of flannel which had long been in contact with the skin, he obtained a yellowish liquid, slightly acid, and of a saltish taste; this was evaporated, and deposited, after a few days, a granular mass of phosphates. The supernatant liquor was then treated by alcohol, and gave, after evaporation, a residue emitting a strong smell, and having a sweet taste. This, being dissolved in water, and decomposed by oxalic acid, gave in about thirty-six hours, a precipitate composed of small crystals of oxalate of urea. To make doubly sure, Dr. Landerer dissolved these crystals, and treated the solution by carbonate of lime, and then by alcohol; after evaporation, a few drops of nitric acid were added, and silky crystals, of a slightly acid taste, and decrepitating over the fire, were obtained.

Lancet, May 13, 1848, p. 524.

60.—CASE OF INJURY TO THE KIDNEYS.—BY Dr. E. J. Shearman, Rotherham.

In consequence of death in general so speedily following the suspension of the excretion of urea by the kidneys, owing to its consequent quick absorption into the blood, and poisonous influence on the brain and nervous system, it rarely happens that time is given for a practitioner to determine decidedly, both chemically and pathologically, that the comatose symptoms depend altogether on the non-elimination of urea by the kidneys. The following case, from the attending circumstances, elucidates this point so simply and fully, that I cannot refrain from putting it on record :—

On the 23rd of last September, Edward C——, aged eight years, in perfect health, while at play was run over across the loins by a heavy truck. In two hours after the accident I saw him. He was then in a state of collapse, and my impression was, that some internal hemorrhage was then going on, for he was blanched, cold, and pulseless. He complained of acute pain in the left lumbar region, which was very tender to the touch, spreading to both the inguinal and the pubic region. I gave him stimulants, and kept him warm, by which means, in the course of thirty-six hours, he gradually improved; and he then passed a large quantity of blood with his urine, not having previously voided any urine since the accident. This was repeated several times during the next twenty-four hours.

I examined this urine and blood most carefully, but failed to detect the least particle of urea or urates in it. My little patient became more restless; fever set in, with a pulse at 130; and the pain in the region of the kidneys increased, notwithstanding the application of leeches, &c. But these symptoms, in the course of two days, were succeeded by coma; he could not be kept awake.

I now bled him in the arm, and re-applied leeches to the tender part. On examining this blood urea was most distinctly detected in it, and in considerable quantity. The urine, at the same time, contained not a particle of urea, urates, uric acid, or albumen, and its specific gravity was only 1,005.

I got him under the influence of mercury as quickly as possible; as soon as its specific effect was apparent, urea gradually re-appeared in the urine, and its specific gravity increased. By degrees the comatose symptoms subsided, and in the course of five weeks the usual health was re-established. He continues quite well.

The mode of detecting urea in the blood, which I adopted, was the one recommended by Dr. G. O. Rees ("On the Analyses of Blood and Urine, in Health and Disease," second edition page 40), which I will describe shortly, as some readers may not have that useful work in their possession. The first quantity of serum analyzed was 400 grains by weight, which were evaporated to dryness over an open steam bath. I broke up the dry extract, added two ounces of distilled water, and digested it over an open steam bath for an hour, occasionally supplying the loss of water; then filtered the digested fluid, washing the residue on the filter with distilled water, which I added to the mother liquor. I then evaporated the whole over an open steam bath, and digested the residue with eight times its bulk of absolute alcohol, at a gentle heat, for half an hour, taking care not to diminish materially the bulk of the fluid. It was then filtered a second time, evaporated to dryness, and dissolved in a little lukewarm distilled water, and again evaporated to the consistence of a thin syrup. I now added a few drops of nitric acid, and set it aside to crystallize.

Previously to adding the nitric acid, a very strong odour of urea was perceptible. On examining the fluid under a microscope, to which the nitric acid had been added, tabular crystals of nitrate of urea were easily perceived, commencing, in appearance, as transverse lines across the watch glass. On examining afterwards a larger quantity of serum (600 gains) a more considerable quantity of the nitrate of urea was observed.

Although the quantities of serum analyzed were, in both cases, small, undeniable proof of the existence in them of urea, in considerable quantity, presented themselves; there must, then, have been a large quantity of urea in the blood.

It was my intention to have ascertained the amount of urea in a certain portion of serum, but I was obliged, from existing circumstances, to suspend my examinations at this point.

It is well known that in youth, the quantity of urea in the urine is much larger than in the adult, owing to the more rapid disintegration of the tissues. In this case a considerable portion of that excretion must have been circulating through the system. In the absence of an actual examination of the organs affected, it appears to me that the ramifications of the renal arteries, which form the external vascular portion of the kidneys were ruptured by the accident, which would be followed by congestion and inflammation of the Malpighian bodies and tubuli uriniferi, thus preventing all real secretion, and merely allowing the watery part of the blood to percolate through the tubular portion of the organs.—*Lancet, June 24, 1848, p.* 685

61.—OBSERVATIONS ON ALBUMINURIA.—By Dr. J. F. DUNCAN, Assistant Physician to Mercer's Hospital, Dublin.

In dropsy, depending upon granular disease, three peculiarities of the urine are found commonly associated together. These are, its containing albumen, its low specific gravity, and its scanty amount. At first it was supposed that the mere presence of albumen was of itself a proof of the existence of a granular state of the kidney. Subsequent experience corrected this opinion. It was found that the urine of many persons exhibited this property, who could not be supposed to labor under such a disease. Certain articles of food will produce it temporarily, and it is frequently met with in persons recovering from scarlatina. This latter has been explained by the hypothesis that at such times a desquamation of albuminous matter, similar to the exfoliation of the cuticle externally, takes place from the mucous membrane of the tubuli uriniferi, and, mingling with the urine, gives rise to the symptom. It was then imagined that if albumen could be detected continuously for a length of time, it might safely be inferred to exist. Even this is not always the case. In dropsy, depending upon valvular disease of the heart, the urine frequently coagulates, because congestion of the kidney must necessarily result, and the serum of the blood, which contains albumen, escapes from the gorged vessels into the excretory ducts. Similarly, I have found it very well marked in cases of scurvy, where the attenuated condition of the blood favored its transudation through the capillaries of the gland. In all cases, I believe it indicates neither more nor less than this, that the serum of the blood is passing off by the urine. A granular condition of the kidney may certainly cause it, but it may also occur totally independently of such a state. Two other symptoms which were noticed in the case of Doris, and which are not unfrequently met with, seem also to depend upon the transudation of blood through the kidney: these are, the smoke-brown color that the urine assumed, and its neutral reaction to test-paper. The former is caused by the ferruginous salts being acted upon *in transitu* by the sulphuretted hydrogen of the system; and the latter by the free alkali of the blood neutralizing the acids proper to the secretion. Neither of them, it is manifest, indicates the existence of Bright's disease any more than the property of coagulating by heat; they suggest, however, one precaution to be observed in attempting to determine the presence or absence of albumen, and that is to acidulate the liquid slightly before exposing it to heat, because the ammonia, from its volatile nature, is easily expelled, and the earthy phosphates which are then precipitated might very readily be mistaken for flakes of albumen.

Low specific gravity, and deficient quantity, are both conditions of this secretion, compatible with health, when they exist singly, because they depend solely upon the amount of water carried off at the kidneys. In hysteria, where the fluid is often enormous, the specific gravity is very little higher than that of ordinary water; and on the other hand, when a patient drinks but little, the specific gravity is relatively high. It is only when the two conditions coexist—when the specific gravity is low and the quantity small, that we have reason to consider the patient's state unhealthy. Now, both of these are apt to occur in Bright's disease, because the deposit mechanically interferes with the secretion of the gland. In diabetes, on the contrary, the very opposite takes place. There is enormous secretion and high specific gravity.

In stating, however, that low specific gravity and deficient quantity, are the common attendants of Bright's disease, I must be careful to guard against misconception. Many persons are in the habit of considering them invariably present, but Christison has shown distinctly that both in the earlier and the later stages of the complaint, but especially the former, the quantity of urine passed may very nearly equal the average of health. The diminution of density, however, is in general very remarkable. The reason of this is obvious on a little reflection. The mechanical impediment arising from granular degeneration interferes less with the secretion of fluid than with that of the saline matters which determine the density. This change in the specific gravity is often sufficiently indicated by the ordinary urinometer; but evaporation and drying the residuum will of course insure greater accuracy in the result. Dr. Christison informs us that he has known the solid contents reduced from 1340 grains in 10,000, to 700; 500, and even to 400 grains.

[Although the labors of many eminent men have thrown light upon this disease, yet, Dr. Duncan observes, it is to Dr. Johnson that we owe our knowledge of its real pathology. Dr. Duncan says:]

To explain more clearly the recent discoveries upon this subject, I may mention that it has been satisfactorily proved by Dr. Johnson to be really a fatty degeneration of the kidney, constitutional in its origin, altogether unconnected with inflammatory action, and analogous to fatty degeneration of the liver, but from circumstances hereafter to be explained, infinitely more dangerous in its effects upon the economy.

The three great excretory glands of the human body are, the lungs, the liver, and the kidneys. Each of these has, for its peculiar office, the elimination of an essential element from the organism. Thus; the lungs remove carbon; the liver, hydrogen; and the kidneys, nitrogen. Not that they eliminate these singly or exclusively; various combinations of these elements are formed, but all for the purpose of rendering their removal more easy by the channel that nature has provided for the purpose. Thus, the carbon of the lungs is combined with oxygen, to give it the gaseous form, whereby it is readily carried off during respiration; the hydrogen of the liver is united with carbon, to form the various fatty matters that analysis shows us to exist in the choleic acid and cholesterine of the bile; and the nitrogen of the kidneys is united with hydrogen and carbon to form urea and ammonia.

It is true that a quantity of nitrogen has been proved to be exhaled at the lungs, and a quantity of fatty matter is carried off at the kidneys, even in health; but the amount is so small, relatively speaking, that it may safely be asserted that the proper channel for the removal of each is that which I have just now stated. Whenever any of these processes is interrupted from any cause, a noxious accumulation of these elements results, and more or less injury is the consequence. You are all familiar with this in the case of the lungs. You are probably less familiar with it in the case of the liver. If the fatty matters which are composed of hydrogen and carbon be not removed in sufficient quantity, they accumulate in the vascular system, the blood becomes loaded with them, and a deposit takes place, first, into the parts, naturally adapted for their reception—the subcutaneous cellular tissue, the omentum, mesentery, &c., and finally into other parts not at all designed for the purpose—the muscular tissue, the cells of the liver and kidneys, &c., constituting fatty degeneration of these parts. The danger, however, is not equal in these various situations. In the liver, from the lax nature of the cellular matrix, and the facility with which it admits of enlargement, this lesion may exist to a considerable extent without interfering materially with its proper function. In the kidney, on the contrary, from the dense arrangement of the parts, such a thing is impossible; congestion of the vascular apparatus necessarily results, producing the hypertrophied and mottled appearance which is described as the first stage of the complaint. Subsequently, as the pressure increases, the nutrition of the gland is interfered with. atrophy takes place, and the kidney becomes pale, small, and lobulated. This is the advanced stage.

That the disease is really due to the retention of these fatty matters in the system, and especially to their accumulation in a part unfavourably circumstanced for their reception, is proved not merely by a minute examination of the granular matter itself, but by a variety of other considerations which are worthy of your notice. If a patient labouring under the disease be bled from the arm, and the serum be allowed to separate from the crassamentum, it will exhibit a milky appearance from the presence of oil-globules, which can be removed by digestion in ether. Again, it has been noticed by Dr. Johnson as the result of his post-mortem examinations that Bright's disease is frequently associated with atheromatous deposits in the arteries, which, you know, are really of a fatty nature, and still more frequently with fatty degeneration of the liver. The pale waxy complexion that patients labouring under this disease exhibit, is perhaps due, not so much to the loss of blood, which is constantly oozing through the obstructed kidneys, as to the quantity of fat which is accumulated under the tegumentary membranes. It is a remarkable circumstance that we do not find emaciation to occur in these cases to the extent that we might naturally expect in so chronic a complaint. But the principal argument in support of this view is that which is derived from microscopic examination of the urine. This secretion properly consists of two parts—the water and the saline ingredients; the former in health is a simple percolation from the open capillaries of the Malpighian tufts; the latter is accomplished by means of epithelial scales, which are detached from the inside of the tubuli uriniferi, and which grow from time to time by an inherent vital action. The mechanism of these parts is admirably contrived to facilitate this process; The stream of liquid in its descent through the tubuli washes away the scales as they are formed, and both mingling together constitute the secretion such as it exists. These scales can be readily recognized by the microscope, as I have pointed out to you on several occasions. In health, they are quite free from any adherent fatty matter, and the fluid contains scarcely a trace of any oil-globules. In Bright's disease, on the contrary, both of these appearances become conspicuous in proportion to the extent of the mischief. In acute nephritis and scarlatina the number of these scales is augmented, but their size is diminished, and they evidently give the idea that they have not arrived at maturity. In the case of our patient, the absence of these characteristic appearances in the urine led me to conclude that he did not labour under granular degeneration of the kidney, notwithstanding the many points of resemblance to that disease which his symptoms presented.

Let us now inquire how this theory will explain the operation of those agencies, which are ascertained to be the common producing causes of the complaint. These are, you may remember, intemperance, confinement, and unsuitable food. In fact, it is by the employment of these means that the disease has been artificially produced in animals by Dr. Johnson and others. Intemperance acts by introducing into the system oleaginous fluids of weak power (alcohol being in fact a combination of two atoms of olefiant gas and one of water), and perhaps, also, by its peculiar action on the lungs; for it has been ascertained that while the primary effect of stimulating liquids is to accelerate the respiration, the remote effect on the contrary is to diminish both its frequency and force.

Confinement and bad air operate obviously by depriving the economy of its proper quantity of oxygen. In health, when oxygen is freely supplied to the system, the carbon is consumed as carbonic acid and the hydrogen as water. In the circumstances here supposed these effects cannot be adequately accomplished, and the retained carbon and hydrogen enter into combination, and form fatty matters of various kinds. Innutritious diet, or that which is deficient in animal substances, acts injuriously from the want of nitrogen; for you are aware that ammonia consists of one atom of nitrogen and three of hydrogen—consequently, a free supply of nitrogenous matters must tend powerfully to get rid of one of those elements upon whose existence in the economy this disease depends. I think it unnecessary to tell you that the treatment of this affection, before the present theory was propounded, was as uncertain and unsatisfactory as possible. The most opposite remedies were recommended for its removal, but the only opinion in which all authorities seemed to agree was in its incurability.

Tartar emetic and bleeding, assisted by local cupping, were adopted by some, under the idea that it was a real but peculiar nephritis. Diaphoretics internally and vapour baths were trusted in by others under the impression that it resulted from suppressed perspiration; and others again adopted diuretics upon no very intelligible principles, though the general impression of the profession was decidedly against their use.

Now, on the contrary, instead of this confusion, our course becomes easy, intelligible, and simple; and though we may not anticipate success in every instance, we can clearly perceive that there is nothing in the nature of the affection to render it necessarily incurable or fatal. The microscope not only enables us to distinguish real granular degeneration, and those congestions of the kidney which are liable to be mistaken for it, but it enables us to do so at that very period in the history of the complaint when the diagnosis is important. However dangerous the disease is in the advanced stage, at the earlier periods it is certainly capable of alleviation, if not of cure. The obvious course of proceeding in any such course would be—1st, to remove the exciting and predisposing causes where they exist, such as intemperance, and residence in an unwholesome atmosphere; 2d, to oxygenize the blood by active exercise in the country and in the open air; 3d, to avoid fatty and all other non-nitrogenous articles of food; 4th, to administer alkalies in free doses, which, by their action on the animal fats, will probably render their elimination more easy of accomplishment; and, 5th, to administer purgatives, so as to keep up a tolerably free action of the bowels.

Dublin Medical Press, June 28, 1848, *p.* 401.

62.—ON DIABETES.—By Dr. R. B. Todd, F.R.S., Physician to King's College Hospital.

[In a clinical lecture on the subject of diabetes, Dr. Todd relates the cases of two men who were recently subjected by him to the most rigid dietetic treatment for nearly two months. They were locked up in a room by themselves, and every precaution taken to prevent them getting any food or drink but that which was prescribed. The name of the first patient was Hardy, and he was placed in the solitary ward on the 22d of November, 1847:]

On the day of his admission into the new ward his diet was the following:—For *Breakfast*—Milk, 1½ pint; tea, 1 pint; Bread, 8 ounces. *Dinner*—Meat, 14 ounces; Eggs, 2; porter, 2 pints. *Supper*—Meat, 8 ounces; tea, *ad libitum*.

At this time Hardy was in extremely low condition; he was much emaciated, he suffered greatly from thirst, and was often disturbed in the night by the urgency of his thirst, and the necessity for frequent micturition; he was excessively weak and languid, and could hardly walk up stairs. Three days previous (the 19th), he was weighed, and it was found that his weight was only 128 pounds, it having been 127 on the 14th, and 129 on the 6th. On this day he drank nine pints of fluid, and passed eleven pints of urine, the specific gravity of which was 1.034, and which, to all the ordinary tests, yielded unequivocal evidence of holding a large quantity of sugar in solution.

On the 23d the quantity of liquid drunk was nine pints, and that voided was eight pints, of specific gravity 1.038. His diet for this day was—At *Breakfast*—Eggs, 2; Beef tea, 1½ pint. *Dinner*—Meat, 14 ounces; Beef tea, 1 pint. *Tea*—Meat, 6 ounces; Eggs, 2; Beef tea, 1½ pint. *Supper*—Meat, 8 ounces; Beef tea, ½ pint.

On the 24th he had passed a good night, having been disturbed only twice to make water—this was a great and rapid change in this particular symptom. Very early in the morning he was attacked with a violent itching of the skin, accompanied by an eruption resembling urticaria, which was probably produced by the very different diet he was then taking, from what he had previously. The patient stated that he felt unusually well, and differently from what he had been at any time previously, during his residence in the hospital. The skin was slightly moist; the saliva abundant; tongue clean; pulse 90; urine six pints and a half, eight pints of liquid having been drunk; it was acid, and the specific gravity ranged, during the day, from 1.030 to 1.032; one specimen was passed of 1.021.

The following diet was fixed for him—*Breakfast*—Meat, 1 pound; Water, *ad libitum*. *Dinner*—Meat, 1 pound; water, *ad libitum*; Greens. *Tea*—Meat, 6 ounces; Eggs, 2; water, *ad libitum*. *Supper*—Meat, ½ pound. He was also to have two bottles of Carrara water during the day. On the morning of this day he also took an emetic (Zinci Sulphatis, gr. xxv.;) it did not make him vomit, but produced slight nausea. About 9 o'clock, p.m., he had another attack of cutaneous itching, but it was less intense than the previous one, and only lasted half an hour.

On the 25th the patient felt still better, he had passed a comfortable night, the sulphate of zinc having caused only very slight diaphoresis; he had been disturbed but twice to pass water; the tongue clean and moist; skin damp; thirst less. The urine, which was in quantity eight pints and a quarter, had totally changed, it now contained *no trace* of sugar, and this was the first instance of a specimen of this man's water being destitute of that substance: its specific gravity was 1.028. From this time his general symptoms underwent a decided change, constantly and steadily improving.

The urine became much less abundant; and I would here draw your attention to some of the most striking instances of its diminution in this table, and in showing you this I would also remind you, that on the 19th he drank ten pints ten ounces of liquid, and passed seventeen pints eight ounces of urine; and on the 22nd of November nine pints were drunk, and eleven pints passed; and three days before twelve were passed, while nine were drunk; and I say, remembering how large was the quantity of fluid drunk and passed just previous to this patient entering the new ward, and how fixedly it kept at that high amount, the immediate diminution, and steady decrease, which it subsequently underwent, are very striking:—

Date.	Quantity Drunk.	Quantity Voided.
Nov. 10	144 ounces	192 ounces.
" 22	144 "	176 "
" 24	128 "	104 "
" 26	120 "	92 "
" 29	104 "	92 "
Dec. 5	80 "	68 "
" 9	48 "	80 "
" 10	48 "	64 "

During the whole of his sojourn in this ward, the quantity of urine passed kept very steadily to about five pints, (80 ounces,) the thirst also became much less, and, as you see in the above table, he did not drink half the quantity of fluid he had at one time; three or four pints would often satisfy him. The saliva was much more abundant, and was less acid; the pulse, too, had greatly lessened in frequency, and the diminution in its rapidity seemed to keep pace with the improvement in his other symptoms: thus, on November 24th, the pulse was 90; on the 30th, 80; on the 3rd of December 84; on the 5th, 70; on the 6th, 72: and on the 8th, it was 72 likewise.

[Without pursuing the details of this case further, we may give the deductions drawn from it by Dr. Todd. He says:—]

1st. That the change to an exclusively animal diet was very well borne. It produced no fever, as from common prejudice we might have been led to anticipate, and especially taking into consideration the large quantity taken —about 3lbs. a day; but, instead of fever, the pulse steadily and regularly lessened in frequency, and did not arise again till he had violated the strict law as to his diet which I had laid down for him, and partially returned to his former mode of feeding. Primary digestion was very well performed—wonderfully so, when we consider the large quantity of food taken in, and the peculiar character of that food.

2ndly. That the most marked effect upon the secretions, and upon the symptoms generally, was produced *immediately* after the change of diet. If you compare his condition at two or three days after we commenced our new mode of treatment, with what he was at a fortnight, (excepting his increased weight and strength, which of course must be gradual,) you will see little difference. Three days after his admission into the separate ward, the urine diminished from 176 to 92 ounces; his skin, which had previously been dry and harsh, was moist and soft, and at night he had abundant perspiration; his mouth, before dry and clammy, was now moistened by plentiful saliva, and this, too, was of a more natural character, for it was less acid. All this occurred in the first two or three days. The increase of weight which the patient underwent must necessarily occupy some time; but still it is to be remembered, that in the first fourteen days he gained 7 pounds, while he only gained 9 pounds in forty-eight days afterwards. This shows what a marked effect this mode of treatment had upon the disease immediately upon its establishment.

3rdly. The next deduction that I would make from the details of this case, is relative to the quantity of sugar which Hardy voided in his urine. Now, while the *per-centage* amount of that substance underwent but a trivial alteration, so that any given quantity of his water may be said to have contained nearly as much sugar on any one day as the same measure did on any other day; still, it must be remembered that the urine diminished greatly in the amount daily passed, and consequently the aggregate mass of sugar eliminated, and probably, also, generated, must have diminished in the same direct proportion. Take, for instance, these examples:—On the 22d of November, 11 pints (176 ounces,) of urine were passed, and they contained 6.07 ounces of sugar; on the 30th of the same month, 6 pints and 12 ounces (108 ounces in all,) of urine were voided, containing about 2.60 ounces of sugar; and on the 15th of December, 4 pints 8 ounces (which equal 72 ounces,) of urine were evacuated, containing little more than 2 ounces of sugar. We conclude, then, that while the urinous solution of sugar has been of pretty much the same strength, and with little variation, still the amount of that solution has greatly varied.

4thly. And lastly, I would say that the addition of a *little* amylaceous food to Hardy's diet appeared to produce but little unfavourable effect; there was, however, a slight increase of urine, and the pulse was more rapid; but the extreme comfort he derived from a small quantity of vegetable food more than counterbalanced the trivial consequences it produced.

Bowles, the other patient, was subjected to the same plan of treatment as Hardy; but during its course, phthisical symptoms manifested themselves, and he died. Dr. Todd makes the following remarks in conclusion:]

1. The first inference is, the azotized dietetic plan of treatment is efficacious; that the patients were more benefited by it than by any other means; and that the admixture of a small quantity of vegetable food did not very materially interfere with its favourable operation.

2. The evidence furnished by these cases is opposed to Bouchardat's theory, that the sugar is wholly derived from amylaceous food, and is little, if anything, short of a refutation of it. Take, for instance, Hardy's case; when he was put into the solitary ward he was deprived of all amylaceous food, and yet he still continued passing from two to three ounces of sugar daily. But it may be said that this was furnished by the greens, which he then took; this however could not be the case, for they would hardly weigh as much as the sugar that was evacuated; but there was one period in which he did not even take greens; he took no vegetable food whatever, but lived entirely on meat, and that deprived of fat as much as possible. This period was from the 14th to the 24th of December; notwithstanding, however, this total exclusion of all vegetable matters from his diet for nine days, he evacuated in that time from twenty-five to thirty ounces of sugar, and his own bodily weight was all the while increasing. Whence, I would ask, could all this sugar have been obtained? The same circumstances occurred in Bowles's case, though not, perhaps, to so striking a degree.

3. The great increase of the power of the stomach is truly remarkable; these men found no difficulty in digesting four pounds of meat, besides several eggs, in one day, a task about twice as great as any ordinary stomach could perform. The highly developed condition of the mucous membrane of the stomach was, no doubt, associated with the exalted power of digestion, and probably exists in all these cases.

4. The fact, that sugar could not be detected in the substance of the kidney, goes to show that it is not there secreted, that it does not enter into any organic connection with the elements of the kidney, but merely percolates in solution through it; hence the disease of the kidney must be secondary. The sugar doubtless reaches the kidney in solution in the blood, and there acts upon that organic as a diuretic, passing possibly dissolved in the water that filters through the Malpighian bodies, and not being attracted from the blood through the walls of the tubes.

5. The comparative conditions of the epithelium of the liver and kidneys are very singular, and I am not aware that a similar observation has been previously made; it would tend to show with what avidity all carbonaceous matters, fat as well as sugar, are directed to the kidney, in this disease. Most probably, to some extent, the fat of the liver goes in common with fat from other parts of the body, to the formation of sugar; but this does not account for the deposition of fat in the epithelium of the kidneys.

Lastly, these cases justify the conclusion that this disease is essentially one of the primary organs of digestion, whereby all substances readily convertible into sugar are quickly so converted; and that sugar is not digested, but passes into the blood unchanged, whence it is rapidly eliminated by the kidneys. We must forget that this was, in fact, the view taken of this disease by Dr. Rollo, an English physician, who was the first to suggest the plan of treatment, which all experience proves to be most beneficial.

Prov. Med. and Surg. Jour., June 28, 1848, p. 337.

63.—ERGOT OF RYE IN RETENTION OF URINE.—By Dr. Allier.

In a paper by Dr. Allier, of Marcigny, on the use of the ergot of rye in the treatment of the divers kinds of retention of urine, the following conclusions are laid down:—

1. The ergot restores to the bladder its contractility, impaired by an immoderate distention of its coats.

2. It has acted in this manner when all means had failed.

3. Paralysis of the bladder, resulting from cerebral hemorrhage, has promptly given way on the use of the ergot.

4. The ergot has had no effect on the paralysis of the limbs resulting from apoplexy.

5. The scale is just as efficacious in vesical paralysis, when the lesion of the nervous centres is not clearly established.

6. Paralysis of limbs depending on such lesions has not been benefited by the ergot.

7. This substance shortens the duration of vesical paralysis, which, by the use of the catheter, is generally removed in a period of time which may vary considerably.

8. It has no effect in retention of urine resulting from enlargement of the prostate gland.

9. It acts, in such cases, by increasing the contractile power of the bladder, without causing the prostate to diminish in size.

10. Once in fourteen times the ergot has had no effect whatever; this occurrence happens in pretty much the same proportion with the most approved remedies.

11. As the effects of the ergot are rather evanescent, it should be administered in small and often repeated doses.

12. The dose may be raised to seventy-five grains a day.

13. It is useful to give it afterwards in decreasing doses, for eight or ten days after the cure, to render the latter more certain.

14. The phenomena produced by the stimulating action of ergot upon the nervous system, although generally not of an alarming description, are sometimes, however, so intense, as to render it prudent to suspend its use for a few days.

15. Thus it appears that we possess in the ergot, when systematically administered, an agent capable of curing vesical paralysis, which in some instances, after a longer or shorter time, may yield to other means, but which is generally looked upon as incurable, often producing that sad and disgusting infirmity—incontinence of urine. *Lancet, July* 29, 1848, *p.* 128.

SURGERY.

FRACTURES AND DISEASES OF BONE.

64.—ON THE TREATMENT OF UNUNITED FRACTURE BY SUBCUTANEOUS PUNCTURE.—By Professor Miller, F.R.S.E., &c.

When the principle of "subcutaneous incision" came into use, the idea struck me that this important addition to surgery might be made available towards the remedy of ununited fracture; and accordingly I proposed (p. 692, *Principles of Surgery*, 1844) "that a strong needle, having been passed obliquely down to the part, should have its edge freely moved about in all directions, so as to cut up the ligamentous bond of union, as well as the dense investment of the ends of the bones; the needle being then carefully withdrawn, and the puncture covered by isinglass plaster. The parts will probably be reduced to a state very similar to what attends on ordinary fracture at the first. A pouch of blood will form; the blood will be absorbed; fibrin will take its place; inflammation be absent, the plasma will become organized, and probably form an excellent imitation of the ordinary provisional callus; while, at the same time, secretion and organization may advance from the ends of the bone; and consolidation, as by definitive callus, be completed.

The connecting materials of the "false joint" are disrupted and excited, not destroyed. They are valuable towards the formation of bone, when brought into and maintained in a state of moderate vascular excitement. "A state of active hyperæmia generally precedes the osseous transformation of the fibrous, cartilaginous, and fibro-cartilaginous tissues. M. Rayer observed, that when he excited an artificial irritation in the fibro-cartilage of a rabbit's ear, the part was at first softened; a yellow matter was next deposited in its texture; and, finally, a calcareous deposit was formed, and a true ossification produced. M. Cruveilhier likewise observed different portions of periosteum, ligaments, and cartilages, pass into the osseous or ossiform state, under the influence of different stimulating applications."—*Andral.*

[Professor Miller then relates several cases in which this practice has been adopted. The first bears upon the subject only by analogy, being one of ruptured tendo achillis, of six months' duration. In this case the ends of the tendon and the intervening parts were lacerated by means of subcutaneous puncture, and the process repeated in between two and three weeks. In about nine weeks after the first operation, union was tolerably perfect, and the patient was allowed to walk with a shoe having a heel of cork three inches high, a slice to be removed every second day: she was shortly afterwards discharged cured. The second case was that of a man with ununited fracture of the jaw.]

He had sustained fracture of the lower jaw at two points; near the symphysis and at the angle. The anterior fracture had united in the ordinary time and way. The posterior was still moveable: and on that account he sought the aid of the hospital. There was also slight overlapping of the fractured ends. I punctured the part freely from the mouth, and, having readjusted the bone as well as I could, applied a tightly-fitting pasteboard splint, retaining it by bandaging. At the end of ten days the parts were decidedly firmer; the patient described his sensations in the jaw as much more satisfactory; and I had become very hopeful of a successful issue. Some days later all was still well and promising. Then, however, the poor fellow was seized with virulent small-pox, and died. Unfortunately, an examination of the parts after death was not obtained.

[In the next case there had been fracture of the tibia and fibula, six weeks previously; the fibula was quite united, but the tibia moveable.]

On the day after admission, the ends of the tibia were freely stirred up with the needle, introduced at a fresh point for each fragment; a compress was applied over the punctures; and the limb was put up in starched bandages, with a pasteboard splint on the outer side.

On the 7th of October he was seized with a dysenteric attack, but had recovered on the 14th. On that day a second splint was applied on the inside of the limb. On the 20th, he "states that he feels more strength in the limb."

On the 28th he felt certain that the fracture was tolerably firm, and was extremely desirous to return home. He was accordingly dismissed, with directions to come back in three weeks. The original bandaging had never required to be undone.

On November 28th he again presented himself at the hospital; and, on the bandages being removed, the fracture was found completely consolidated. As a precaution, however, light retentive apparatus was re-applied, with a recommendation that he should wear it a fortnight or three weeks longer. This he promised to do.

From my friend, Dr. Greig, I lately learned that the cure had proved quite satisfactory, and that the patient soon came to walk on the limb very stoutly. Perhaps, however, in one sense, it had been better otherwise: for, shortly after having resumed his duty, his walking led him, on a dark night, along the brow of a precipice; he missed his footing, fell, and was killed on the spot.

[Another case was compound fracture of the humerus.]

Robert Anderson, aged twenty-three, sustained a severe compound fracture of the right humerus, at its upper third, in May, 1846. He was not under my care at that time. He stated that the bone was much injured and protruding, and that at least three inches of it, including the entire thickness, was sawn off at the time of reduction; no union occurred; and when he presented himself to me, on the 23d of September following, the limb was quite useless, moveable as a flail, and a large unoccupied space could be felt between the ends of the bone, these latter feeling attenuated, and rounded off at their extremities.

Here there was not only a want of union between fractured ends, but also a vast deficiency of space to fill up; a very unpromising state of matters under any treatment. However, though far from sanguine of success, I resolved to practice the subcutaneous puncture; the patient *might* be benefited thereby, and could not be made worse; the practice, by failure, would not be disgraced, and even a partial success would tell greatly to its credit. The needle was used, and splints carefully applied; after some weeks, puncturing was repeated, and the patient sent home. At long intervals he has come back, and had the operation repeated four or five times in all.

On the first use of the needle, I had a difficulty in bringing the instrument's point in contact with any thing like bone, even at the extremities of the shaft; and the intermediate space certainly did not contain a particle of earthy matter. On the next introduction, the ends of the bones were more readily and distinctly rubbed against; and, in the intermediate space, spicula of earthy matter jarred plainly against the instrument. On each successive introduction, the presence of bone, in process of formation, became more and more distinct. On the last occasion the needle had not to seek for bone, as it were; but at once came in contact with it.

He is now in the country. On his return I shall advise him to remain in the hospital, with the double view of repeating the puncturing at much shorter intervals, and securing a more thorough immunity from motion in the limb than could otherwise be obtained. I think that hitherto the stirring up has been performed too seldom, and that the chance of procuring ossification will be materially strengthened by maintaining a more constant excitement in the parts.

[In conclusion, Professor Miller observes, that while these cases (with another which he relates) do not offer conclusive evidence in reference to the practice in question, they ought to induce the profession to give it a fair trial. He says,]

It is surely better—though somewhat like—the practice of John Hunter: whose treatment of an ununited fracture of the humerus, Mr. Samuel Cooper tells us, was as follows:—"There was an artificial joint, and he made an incision into it: and then, having introduced a *spatula*, he irritated the whole surface of the artificial joint. This brought on considerable inflammation, which ended in anchylosis, and the patient was cured." The subcutaneous puncture and the needle, if they are likely to obtain the same ultimate result, are surely preferable to the incision and the spatula. White's severe operation of cutting down, and sawing off the ends of the bones, was not only hazardous to life, but not unfrequently failed to accomplish the end in view; in some cases it proved fatal. Dr. Physick's seton is less formidable than the saw; but chance of failure with it is not slight; and in fractures of the lower extremity, indeed, its success may be regarded as only the exception to the general rule. Mr. Amesbury's pressure has not come into vogue; but is rather looked on as painful, irksome, and uncertain. Of Dieffenbach's pegs I have no experience; but I am quite sure that the insertion of them must in most cases prove difficult, and their presence in many dangerous. Lately Mr. Burman has employed galvanism as an exciting agent, and with success, in the case of an ununited fracture of the tibia of fourteen weeks' duration. There were other means at work, however; namely, an improved diet, and constant firm pressure on the fractured ends. It may have been the galvanism alone that moved the plasma and its organization; but many, perhaps, will be inclined to rank that agent rather as an adjuvant than as a principal. To the method by subcutaneous puncture it might prove a powerful auxiliary. The simultaneous use of both is not incompatible; and, in these days of chloroform, the frequent repetition which either may require, cannot be considered as cruel and objectionable. From neither, conducted with ordinary prudence, can risk of untoward casualty be suspected.

Of course, in no case is local treatment exclusively to occupy our attention. Constitutional management must never be overlooked: and often it proves of the highest importance. Further, I may add, that the foregoing observations are not intended to apply to those cases where non-union is obviously dependent on the impaction of a slip of muscle between the fractured ends, or to the presence of a piece of dead bone, or to the lodgment of a foreign body from without. In such cases, immunity from motion, with attention to the system, after removal of the cause, is usually sufficient.

Monthly Journal, June, 1848, *p.* 341.

65.—ON THE TREATMENT OF FRACTURES OF THE THIGH IN INFANTS.—

By E. F. Lonsdale, Esq., London.

[It is well known how difficult it is to get a fracture of the thigh in infants united without shortening, and curving forward of the femur. Mr. Lonsdale, however, suggests a plan by which this difficulty may be obviated. He says:]

The treatment generally followed for these cases, and the one that I have hitherto employed myself, is to keep the limb in the extended position, by using long lath splints, extending from the hip down to the foot. (I am convinced that short ones, applied to the thigh only, cannot keep the ends of the bone in apposition.) The splint in the front should be the longest, and be made to pass up before the hip-joint as high as the crest of the ilium. A thick pad is placed on the upper portion of the thigh bone. Great pressure, however, is required to insure the effectual action of the splints, as well as the necessity of keeping the child in the horizontal position, a position that is difficult and irksome in infants, more particularly during nursing.

Meeting with these difficulties, I turned my attention to the possibility of treating these cases by the flexed position, and have been enabled to do so by the following simple means, which, in the case of a child twelve months old, recently under my care, answered most satisfactorily; the correct apposition of the ends of the bone being preserved at the same time that the position of the child was less constrained and awkward.

I employ two narrow long strips of sheet iron, an inch wide, and thin enough to allow of being easily bent at any angle required, though sufficiently thick to bear the weight of the limb without yielding. They are applied as follows:—The child is placed on its back, and an assistant holds the limb in a position so as to flex the hip and knee joints, the angle of flexion being similar to that employed when the inclined plane is used for adults. The two thin iron splints are then bent at angles corresponding to the hip, knee, and ankle joints, to adapt themselves to the limb, in the position in which it is being held by the assistant. An important point to attend to is the proper length of the splint. The upper one should be long enough to pass up in front of the hip-joint, to lie flat on the lower part of the abdomen, and to extend down over the instep to the toes. The back one should extend up behind the buttock, being curved to fit its shape, as high as the posterior margin of the crest of the ilium, and long enough to extend down behind the heel to the sole of the foot. If the two splints are bent at proper angles, to correspond with the shape and position of the hip, knee, and ankle-joints, they will, when firmly bound to the limb, keep it in the position required, which is one that most favours the correct apposition of the ends of the bone, by relaxing all the muscles. The limb must of course be evenly rolled before applying the splints, and the splints themselves be padded. The upper ends of the splints are to be firmly fixed to the pelvis, by passing the bandage many times around them, and occasionally reversing the direction of the bandage round the ends of the splints themselves, to prevent them being displaced laterally.

Medical Gazette, Aug. 4, 1848, *p.* 203.

66.—ON THE MECHANICAL TREATMENT OF CURVATURES OF THE SPINE.

—By JOHN BISHOP, Esq., F.R.S., Surgeon to the Northern Dispensary.

[In the following remarks Mr. Bishop discusses the respective advantages of the prone and supine positions. He says:]

In inflammatory states of the intervertebral substance, and in caries of the vertebræ, which always require that the parts affected should be relieved from superincumbent pressure, and kept in a state of rest, there can be no doubt that the recumbent posture is necessary. The tendency of nearly all invalids, when confined to their beds by aggravated sickness, is to lie in the supine posture; and this they do spontaneously when the disease is of such a nature as to render it indifferent to the practitioner what kind of posture the patient may be inclined for ease and convenience to choose. Whatever may be the immediate pathological cause of invalids thus assuming the supine position, the fact of their doing so shows that it must be the most agreeable one; but although the form and structure of the posterior surface of the body render it best adapted for reclining on, this posture cannot be permanently maintained without injury to the integuments. The position is, besides, objectionable, because it prevents access to the parts which may require topical applications, such as liniments, frictions, blisters, setons, issues, leeches, &c. This objection holds good as long as the patient is not allowed to turn on his side; but as this might be done without injuriously disturbing the affected parts, the supine position could be resumed when desirable, and the patient placed on the side when necessary. The advantages of adopting a recumbent position, and occasionally changing it from the back to the side, in organic diseases of the vertebræ, has been experienced by the author in so many cases as to justify his giving to the supine the preference over the prone posture. The result of a number of observations, without entering into details, is this—namely, that in cases of curvatures of the spine arising from disease and absorption of the bone, the distortions do not increase while the body is kept in horizontal, supine, and lateral positions; but they do increase when the body is allowed to move and be erect; and that, moreover, when patients are confined to the prone position, so far as the author's experience goes, the curve of the spine is progressive, for which there appear to be mechanical reasons.

The prone position has been recently introduced into the list of the mechanical plans of treating distortions of the spine. Under this method of treatment the patient is laid on the face on a double-inclined plane, so that the weight of the trunk is supported on the thorax and abdomen; and, accordingly, the head must either rest on the lower jaw, or be upheld by its extensor muscles and ligaments; the play of the ribs and of the abdominal and thoracic muscles and viscera is restricted, and after a time the thorax itself is flattened, and the digestive, respiratory, and circulating functions are more or less impeded.

The advantage derived from a prone position, as a set-off to these grave evils, is the facility of making topical applications. Mr. Liston observes—"Perhaps the prone position, about which so much has been said lately, is the most favourable, as it takes pressure off the diseased parts, and prevents the carious bodies of the bones from falling upon one another. It also assists the return of blood from the numerous veins contained in the vertebræ and in the spinal cord." Now if all the advantages just enumerated really existed, we should then have to consider, not only whether they counterbalanced the injuries sustained by this system, but also whether either the supine or prone position ought to be continued throughout the whole treatment of organic diseases of the vertebral column.

[After observing that when patients affected with ordinary lateral curvature have been kept in the recumbent posture for months, it is frequently found that the moment the erect posture is resumed, the curvature reappears as before, Mr. Bishop says:]

It is manifest, that lateral curvature of the kind above mentioned should not be treated by laying the patient for lengthened periods in the recumbent posture. In the first stages, when no abnormal change has taken place in the bones and cartilages, and a tendency is perceived in the young and delicate to assume any position prejudicial to the figure, accompanied with a sense of weariness after standing and walking, the patient should resort to a recumbent position, and lie in on a firm mattrass or couch for some time every day, according to circumstances, as long as may be required; not with a view of curing the lateral curvature of the spine, but in order to rest the body, so that the patient may not be induced to assume the attitudes which produce this form of distortion when standing. When the spine is affected with caries of the bodies of the vertebræ, the recumbent posture is indispensable, and no machinery adapted to prop, push, or stretch the body that has ever been invented will be efficacious in the treatment of these cases. When the patients are laid in a recumbent posture on the first appearance of organic mischief, the amount of distortion is greatly diminished. Much depends on the care and manner in which this reclining is carried out; the more nearly the body lies in the horizontal plane the better, for important reasons. When the head-piece of a triple-inclined plane is raised to an angle scarcely sufficient to allow the patients to see horizontally, they have a constant tendency to raise the head above the plane, by which means the bodies of the affected bones are irritated and pressed on; if, therefore, this is observed, it will be necessary either to lay the patient perfectly flat, or to confine the head to the plane, according to the circumstances. The nearer the trunk is laid in a horizontal posture, the less from the direction of the great dorsal curve will be the pressure on the bodies of the dorsal vertebræ; and if the mischief is in the lumbar region. it will be necessary to adapt a support to the lumbar curve. The same may be observed when the disease affects the cervical vertebræ; indeed a person conversant with the figure and mechanism of the spine may easily release any portion from injurious pressure, by adapting the surface of the couch to the circumstances of the case, without having recourse to the barbarous stretching machine of the English and French schools. This end may be accomplished by considering the spine as a bent lever and causing it to rest on a point, as a fulcrum, opposite the parts requiring relief; the weight of the body itself then acts at each end of the lever, and exerts a mechanical force quite sufficient to release from pressure the parts affected with organic disease.

The progress of lateral curvature not originating from organic disease, may be divided into three stages. The first comprehends those cases where the curvature depends upon attitude, or the presence of extraneous force, without having produced any altered figure of the vertebræ. or absorption of inter-vertebral cartilage. The second comprises those cases in which the curvature results from a slightly altered figure of the vertebræ and cartilages, in very young and growing persons, the bones not being yet sufficiently hardened with their due proportion of earthly constituents, and where the curvature is produced by extraneous forces. The third embraces cases of long duration, in which the vertebræ have assumed an altered figure, and have become hardened by an increased supply of earthly constituents; the persons are of a more advanced age, and the body has acquired a position of equilibrium corresponding to the distortion of the spine. The great objects to be kept in view by those who have the management of children are, to see that none of those causes which produce ordinary lateral curvatures be suffered to act, and to attend to the physical condition of the body in the earlier stages of development.

It is from the neglect of these precautions that children fall from the primary into the secondary stages of lateral curvatures. When the vertebræ and inter-vertebral cartilages lose their natural figure, the body assumes a new state of equilibrium, in which the spine is curved laterally, and often twisted spirally; and if time be allowed for the vertebral bones to grow and become hard, while the body is thus distorted, the patient falls into the third stage, in which no mechanical treatment will restore the parts to their normal figure. In order to rectify lateral curvatures of the spine with the greatest certainty and least loss of time, they should be taken in hand as early as possible in the first stage, before the vertebræ change their normal figure, when a clear perception of the cause will enable any person acquainted with animal mechanism to remedy the mischief; and the practitioner will be enabled to effect in a few weeks a cure, for which probably years would not suffice if the disease were neglected at this time. In the treatment of the second stage, we have first to ascertain the immediate cause of the distortion, and the nature of the extraneous force acting on the spine; whether it be in the body or external to it; and when the nature of the force is considered, whether it be constant or intermittent, avoidable or unavoidable we can then determine the means of counteracting it; but without this previous knowledge, any attempt to restore the patient must be empirical. It is of fundamental importance to provide means that will put the body into a state of equilibrium, with the spine erect. This should be effected by putting the patient into the proper attitude, if practicable, by means of the muscles themselves.

When the cause of the curvature is external to, and independent of, the spine, it is quite clear that the measures to be taken to remedy the defect must also be external to the spine. By taking such measures as the nature of the force impressed requires to counteract its effects, the spine will soon regain its normal figure in the secondary stage, without the aid of instruments of any kind applied immediately to it. The treatment of the third stage of lateral curvature is quite another thing. Now, although we know that bones will, at any period of life, change their form under certain circumstances, yet when persons have suffered the distortion of the spine to remain many years uncounteracted, until they have ceased growing, it naturally remains permanent, and years of treatment, however scientific and well adapted to relieve the patient, will most probably fail. Such being the results of neglect, it is incumbent on all those who have any interest in the treatment of these affections to begin in the earliest stage, or, at latest, in the secondary stage, when success is almost certain; and not to allow the patients to fall into the third stage, when they become the subjects of experiments, which usually only torture them, at the expense of their health, time, and money. While very great attention, with unsatisfactory results, has been paid to curvatures of the spine, very little has yet been done with respect to curvatures of the lower extremities, and their influence on the rest of the body. As unequal curvature of the legs, although they may be equal in length, must, if neglected, produce curvature of the spine, it surely becomes of importance to attend to those organs, since they support the whole body. In a large number of cases, surgeons have attempted to remedy distortions of the spine by machinery, when the origin was to be found in the state of the lower extremities—thus attending to the effects rather than to their causes. When the shafts only of the long bones of the legs become distorted, they sometimes do, and at other times do not, regain their normal figures; but it often happens that in children the shafts are not only curved in more than one plane, but are also curved unequally, and then they walk very badly; if this is suffered to go on, the spine participates in the distortion, for reasons which have been already explained. If the curvature of the legs occurs at the knee-joint, and there results an eccentric movement of leg upon the thigh, this form of distortion does not recover spontaneously, and does not admit of being cured, unless it be taken at an early stage.

There has existed in the minds of many surgeons a repugnance to the application of irons for supporting the legs of children, on two grounds: first, on the supposition that the legs get straight spontaneously; and, secondly, that the weight of the irons is objectionable, and entails a continual expense to keep them in repair. Those who take this view forget, that in standing, the weight of the iron rests upon the ground, and that in walking the force of gravity swings the irons, as it does the legs themselves, with but slight muscular exertion; indeed, so far from their being an incumbrance to the wearer, they are of very great assistance. Most weakly children walk much better and firmer with than without them; and the author has seen many children who refuse to part with their irons, and weep when deprived of them. With regard to their breaking, much depends on their original strength and make; the force impressed on them, and the friction at the joints in walking, requires them to be well made, and their strength adapted to the age and power of the patient. Mr. Amesbury and Mr. Tamplin recommend that there should be no joint in the iron at the knee; but if the leg be kept constantly extended in walking, it tends to distort the trunk in the same manner as a wooden leg interferes with the natural movements of the body, and it is therefore very prejudicial. The iron should be constructed so as to allow of all the natural movements of the limb, and, at the same time, to give it efficient support. This cannot be accomplished without having joints corresponding with those of the hip, knee, and ankle. It is strange, that while nearly all surgeons admit the propriety of supporting the spine, so many of them should deny the use of supporting the legs—especially since the office of the latter is to support the whole body, and of the former, only a portion of it. When the legs bend, it is really because they are not able to bear the weight of the body. Not so with the spine, which is able to support itself, but which must conform its position to the condition of the legs. Therefore to prop the spine, which is curved by the state of the legs, is just as if a person who has the foundation of his house defective, which causes the superstructure to incline, should attempt to remedy the evil by propping the upper parts, and neglecting the repair of the foundation, which is the seat of the mischief. An architect would be called insane were he to adopt such means for such an end: yet this is precisely analogous to the plan of propping the spine, and neglecting those defective states or malpositions of the lower extremities, which give rise to the greatest number of cases of lateral curvature.

Lancet, July 1, 1848, p. 7.

67.—ON THE DIFFERENCE BETWEEN SYPHILITIC AND SCROFULOUS AFFECTIONS OF BONE.—BY M. RICORD.

[M. Ricord enumerates the following points of difference:]

Syphilytic Affections of Bone.	*Scrofulous Affections of Bone.*
1. Very rare with young people.	1. Very frequent in youth.

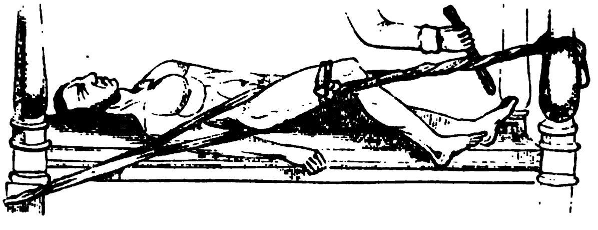
pletely freed as possible from the sulphate of lime, with which it is usually largely adulterated, and to the presence of which the more common specimens in a great measure owe their aperient quality, especially the commonest and impurest of all, the sulphur vivum, as it is vulgarly called, which, from this circumstance, is in great repute among the poor as an effective cathartic; the presence of this substance, however, in these commoner kinds of sulphur, would render them of little service in the treatment of scrofulous disorders, in which it is necessary, to insure its beneficial action, that the remedy should find its way into the mass of the blood, which it is not able to do, or at least very slowly and imperfectly, when by reason of its adulteration, its principal action is upon the intestines. I have generally found that in a short time after the commencement of this treatment —coupled with other important hygienic means which it is unnecessary to mention, further than that they have comprised pure air, wholesome and nutritious food, and gentle and well-regulated exercise—the action of the heart, previously feeble, has become altered in its strength, and that the extremities and cutaneous surface, which a little time before were habitually cold, have recovered a certain degree of permanent warmth which has manifestly aided the removal of any local scrofulous affection to which the patients submitted to this treatment have been subject. It has appeared in every case to act by stimulating the heart to a more healthy action, and has thus necessarily produced a corresponding vigour of the capillary circulation, upon which it would seem that the successful treatment of local scrofulous disorders principally depends. *Medical Times, May 27, 1848, p. 54.*

DISLOCATIONS.

69.—ON DISLOCATION OF THE THIGH.—By W. N. Spong, Esq., Aylesford.

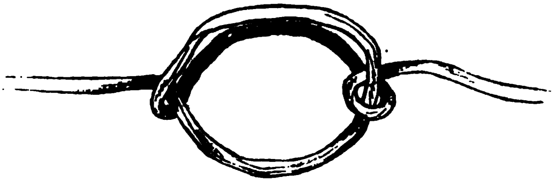
[Mr. Spong suggests the following method as applicable when the ordinary apparatus and assistance cannot be obtained:]

The requisites are, two or three strong narrow sheets; one to fix the pelvis in the ordinary manner, the other to be employed for the purpose of extension, as follows:—The middle of the sheet, rolled up into a flattened rope, is to be applied immediately above the knee by means of the noose, which will be presently described, and the two ends brought forward, are tied to any immoveable object. A common bedstead answers for the employment of this method extremely well. The sheet that fixes the pelvis is to be firmly tied to one post; the other fixed to its opposite. The sheet by means of which extension is made will be seen to be double, and the mechanical power is gained by placing a short lever, about eighteen inches or two feet in length, (any stout piece of stick answers for this,) between the two ends of the sheet, midway between the knee and the object to which this sheet is tied, and proceed to twist them, until the requisite degree of extension of the limb is attained. By this means vast power is brought into play, far greater than can ever be required for the reduction of a dislocated femur.



Extension can be performed slowly and regularly by the surgeon himself, or immediately under his superintendence. It is also well sustained; and if at any point of time, during the process of extension, he desires a sudden relaxation, it is effected immediately by releasing the lever—the sheet untwists itself, and the object is attained. The lever should be tied to the sheet previously, or its sudden rotation will throw it out with violence. Before extension is made, everything should be brought as tight as possible; and to prevent either of the knots slipping, it is well to tie them over with twine or tape. For the same purpose the sheet should be rendered damp at that portion which encircles the thigh, and also where the knots are placed, previously to tying them: the common surgeon's knot will be found to answer best.

The noose is applied, as usual, immediately above the knee, embracing the condyles of the femur; it is simple and instantly made, nevertheless, not so easily described in writing; it somewhat resembles the clove hitch, but has this advantage,—the two points from which extension is made can be placed either on opposite sides of the limb, or can be approximated, so that the extending power shall act on one side of the limb only; moreover, it cannot slip, and its constrictive power is only just sufficient to maintain its position. It is made by taking the centre of the sheet, and forming a circle whose diameter shall be that of the limb; that portion of the sheet which is held in the right hand is passed over the left, outside, and brought up through the circle, in the form of a loop; the limb is passed through this loop, which is then drawn tight. It will now be seen that the loop embraces one-half of the circumference of the limb, and the circle, now doubled, the other. For the sake of example, this can be readily applied to the thumb by means of a piece of tape, and its use will be demonstrated. Such points may appear of minor importance, but in the time of need they are of moment, for in most operations, success too often depends upon attention to minutiæ. A rope, for the purpose of torsion, answers very well, but of course a sheet must be employed for the noose; altogether, it is best to have the whole formed by the sheet alone, and if one is not long enough, two must be used.



In all cases of reduction, the amount of power is measured more by the effects than its degree, it being the part of the surgeon to direct its application and limits with the usual adjuvants, such as bleeding, tartar-emetic, &c. If it is necessary to carry the torsion to an extreme degree, it may encroach upon the knee, and constrict it somewhat; to prevent this, the end of another short lever may be placed between the sheets, previous to the commencement of torsion, and allowed to revolve a turn or two, it must then be held firm, and will effectually prevent any further encroachment towards the knee.

In the most common dislocation of the femur—that upon the dorsum ilii—the limb is shortened from an inch and a half to two inches and a half, the bone has therefore to be extended to that degree, or a trifle more, to get it over the edge of the acetabulum, and the amount of shortening caused by torsion of the sheet can be made to far exceed this; nevertheless, care should be taken to bring everything as tight as possible before torsion is commenced. A convenient pad is formed by doubling a napkin so as to make it a fourth of its size, and then rolling it up diagonally, which forms a pad, tapering towards each extremity; this is to be enclosed in that portion of the sheet employed to fix the pelvis, which passes between the pudendum and thigh.

The advantages of this method are that it can be used at all times, and under all circumstances, while the extending power can be regulated to a nicety. So efficient is it, that I would prefer it to the pulleys, which certainly have a somewhat barbarous appearance as applied to the human frame; and again, that surgeon will better exhibit his resources, who can convert such household goods as sheets and bedframes into the appliances of his art, than he who is powerless without his plenitude of rope, pulley, and set and appropriate apparatus.

Two kinds of household sheeting are met with; one, very broad; the other, narrow. This latter is the cheapest, and is most frequently used for domestic purposes, a broad sheet being made by sewing two narrow pieces together, of this breadth it is too bulky when rolled up, and unless a narrow one is at hand, such a sheet can be divided down the seam without injuring it.

The method above described can be applied in five minutes, and might be conveniently termed—reduction by torsion. *Lancet, May 6, 1848, p. 497.*

70.—DISLOCATION OF THE SHOULDER.—By W. N. Spong, Esq., Aylesford.

For the most part this luxation is of easy reduction, but now and then it so happens that the patient is particularly strong and athletic, and the surgeon perhaps just the reverse. This being the case, his efforts may prove unavailing, and a further outlay of power be required. Supposing the common methods of reduction, as by the knee in the axilla, or the heel in the same, the extension by the hand, &c., to have failed, in such a case the same means can be applied as for dislocation of the femur, and reduction effected by torsion; or the following method will be found efficacious:—

The patient being placed on a sofa or bed, or on the floor, the heel is to be placed in the axilla, (the same as for reduction by extension at the wrist,) and a long towel, or narrow sheet, is to be applied immediately above the elbow, embracing the condyles of the humerus, by means of the noose previously described for reduction of the femur, and the two ends, brought forward and tied firmly behind the back of the surgeon, he leaning forward a little while doing so. The towel or sheet should be rendered damp at that portion which encircles the arm, and it should cross the back, low down, over the lumbar region. The knee being kept straight, or nearly so, powerful extension can now be made, as the position of body is well adapted for the outlay of great physical strength, all the powerful muscles of the back being advantageously brought into play. At the same time, the arms and hands are free, and the patient's fore-arm being bent to a right angle with the upper arm, can be used as a lever in manipulating the reduction.

If it be required, extension can be made at right angles to the body of the patient, as in employing the pulleys, by placing the hollow of the foot against the parietes of the thorax, close up to the axilla, and using extension as before: and in this position, while extension is actively maintained, the patient's body can be brought parallel with the extending power, by which manœuvre reduction will be aided. Or extension can be used with a counter-extending sheet, to fix the shoulder in the usual way, one foot being placed against the parietes of the thorax, in the axilla, the other against the side of the bed; or the counter-extending sheet; being firmly fixed, both feet can be applied to the side of the bed, the surgeon sitting on a chair.

Every surgeon, in reducing dislocation of the shoulder by means of the heel in the axilla, and extension of the wrist, has experienced how fatiguing it is; but if he employs the above means, ten times the power can be brought into play,—supposing for a moment it were necessary,—and the mere weight of the body, reclining back, will maintain the advantages already gained. So efficient is it, that other mechanical means need rarely be resorted to. Which shoulder soever is dislocated, the operator uses the corresponding heel, right or left. *Lancet, May* 6, 1848, *p.* 498.

71.—REDUCTION OF A DISLOCATION OF THE HUMERUS, OF THREE MONTHS' DURATION.—By F. C. Skey, Esq.

[This was a case of dislocation into the axilla, of three months' duration, in a gentleman subject to epileptic seizures.]

The attempt [at reduction] was made by two consecutive operations, quite distinct in their object from one another. The first that of detaching the head of the bone from its false position, and tearing asunder the new substance, whatever it might be, that tended to retain it there; the second that of replacing it in its socket.

The patient was placed on a low bed, the body fixed by a round towel passed through the axilla, and a second round the chest, and fastened in a line with the opposite axilla. Extension was made from the wrist by means of pulleys. The arm was drawn out from the body to a right angle, and even beyond it, and I then twisted the arm and dragged it with great force in all directions. This proceeding occupied from ten minutes to a quarter of an hour, and was attended with some pain, inasmuch as the chloroform was difficult to administer, or probably, from the caution necessarily employed, we were indisposed to obtain its entire influence before the tension was begun.

By this process, I obtained great mobility of the limb, which could now be twisted and turned in every direction. The apparatus was now entirely removed, and preparatory to its reapplication the right or affected side of the body was brought in a straight line between the two points of extension. The counter extension was effected by a short cylindrical rod of iron about eight inches in length, padded sufficiently on one side to fit into the cavity of the axilla. To each nobbed end of the rod the rope was fixed and carried upwards, the one from behind, the other in front of the shoulder, and fixed to the wall. The extension cords were attached to the wrist as before, by means of the india-rubber bandage, now generally employed for that purpose, and extension was made by pulleys in a direction straight downwards along the line of the body. The chloroform was again resorted to, but with no great success, and, judging from the violent expression of pain that attended the subsequent stages of the operation, I do not consider that my patient was in any respect under its influence. When the extension had been continued for ten minutes, the head of the bone had obviously descended from its original position. At the expiration of twenty minutes, it was impossible to say whether the bone were reduced or not. There had been no visible sign of sudden change in the relation of the bone, and very powerful extension had been continued as long as we deemed it desirable or safe. I was the less inclined to protract his sufferings, inasmuch as, having proceeded thus far with impunity, I had inwardly resolved to repeat the attempt at reduction, should the present effort fail. The cords were now suddenly relaxed, and the arm thrown across the opposite shoulder and there bound. At this period the roundness of the shoulder appeared to be restored, and the very position the arm occupied argued the great mobility of the limb, which position was unattended by pain; but whether the head of the bone was in the socket or otherwise, it was still difficult to determine. Mr. Stanley was of opinion rather that it was, than that it was not; and in this opinion I concurred. The arm was fixed in its position, with a large pad in the axilla, and I sent Mr. B. home.

On the following day I visited him, and removed the bandages, in consequence of his complaint of considerable uneasiness. As he sat up in bed with all the appliances of the previous day removed, while in the act of making what I intended to be a full examination as to the situation of the head of the bone, I raised the head freely with my left hand, and drew it outwards, and the head slipped into the socket with a slight but very palpable shock, perceptible to my patient, to his brother who was assisting me, and to myself. I then placed a large pad consisting of a pair of worsted stockings in the axilla, and again bound the arm to the side by a long bandage encircling the arm, body, and opposite shoulder. Ten days elapsed without a return of a fit, and I entertained a hope that the operation he had undergone might prove serviceable in a medical as well as in a surgical sense, but the fit returned on the eleventh day.

Three months and three days had elapsed since the accident, and the arm was reduced on the ninety-sixth day without any extraordinary powers being resorted to in the way of mechanism, or without any draught being made on his vital powers.

[Mr. Skey attributes the successful issue of this case, first, to the means employed for systematically breaking down the new attachments of the head of the bone; and, secondly, to the direction of the extending force. He conceives that the reason why the heel in the axilla "is so efficient in the reduction of ordinary dislocations of the humerus, is that the extension is made by the surgeon in precisely the right direction, namely, in a line parallel to the body."] *Medical Times, June 3, 1848, p. 69.*

72.—ON THE FORCE REQUIRED IN THE REDUCTION OF DISLOCATION.—

By Bransby Cooper, Esq.

The degree of violence that may be used must of course depend upon numerous circumstances,—such as the age, sex, muscular power, constitutional peculiarity, and state of health of the patient, and there are few points in surgery in which it is so difficult to arrive at just conclusions, as with regard to the amount of force that can be safely applied in surgical operations; as, for example, in reducing a hernia, or passing a catheter in case of stricture: the term force in its surgical sense is extremely indefinite in its signification, and must be always understood relatively, and not positively.

The French surgeons have attempted, in cases of dislocation, to measure the force employed in the extension, by means of an instrument applied in the apparatus: by this arrangement, although in an individual case its utility is not very manifest, they are enabled to arrive at a kind of statistical average of the requisite power, which by the consideration of the peculiarities of the case they can also apply with a degree of judgment scarcely to be attained without such an indicator of the accession of the extending force employed: the power of the pullies, without some such contrivance, may be gradually increased, to the destruction of all the tissues connecting the limb to the body, and occasionally, indeed, the most serious accidents have occurred from the injudicious application of these powerful accessories. *Medical Gazette, May 12, 1848, p 796.*

AMPUTATIONS.

73.—CASE OF AMPUTATION AT THE SHOULDER JOINT.—By W. Fergusson, Esq., (Reported by H. Smith, Esq.)

[A man got his arm drawn between two rollers driven by steam power, and received thereby a most severe compound fracture and laceration of the limb. In order to liberate him from the machinery, the integuments were divided a few inches below the shoulder, and he was then removed to King's College Hospital.]

His right shoulder presented a frightful appearance. The great muscles were all extensively lacerated, and the integuments were separated to a considerable extent. The bone, which had been broken across at the upper third of the arm, was lying bared of its coverings, and the axillary artery was seen pulsating on the surface of this great wound, which was at least from eight to ten inches in diameter. There was not much shock; in fact, the man was much excited by a large quantity of brandy which had been given him directly the accident happened. He was, in a short time, carried into the theatre, and Mr. Fergusson proceeded to perform disarticulation at the shoulder-joint. The subclavian artery being compressed by the fingers of an assistant, above the clavicle, the soft parts which remained about the joint were detached, the capsular ligament was then opened from above, and the bone removed. The axillary artery was then carefully removed from the surrounding textures, and a ligament was applied. Two other vessels required tying. The torn integuments and muscles were then taken off, and as good a flap as circumstances would admit of was obtained. It was stitched together, and the patient was placed in bed, and ordered forty minims of tincture of opium, with a drachm of aromatic spirit of ammonia, in camphor mixture.

[He went on, upon the whole, satisfactorily, from the day of the operation, July 6th, until the 15th, when hemorrhage took place from the axillary artery. The following is Mr. Smith's report:—]

15th.—Ten A.M.: Still improving; wound looks very healthy; axillary artery appears to be pulsating violently. At half-past one, during the patient's efforts over the bed-pan, the above-mentioned vessel gave way, and he was instantly deluged with blood. The house surgeon was passing the ward at the time, and on the alarm being given, went to the patient, and stopped further hemorrhage, by pressing above the clavicle,—until Mr. Fergusson arrived, and placed a ligature on the artery above the spot where it had given way. The patient was much exhausted, and almost pulseless; wine and brandy were freely given him, and he gradually rallied from this condition, became cheerful, and took some nourishment. At the evening visit he appeared quite tranquil, pulse 110, pretty firm; countenance not so pallid. He was ordered half a drachm of tincture of opium, and to be carefully watched.

July 16th.—At five A.M. the house surgeon was called, and found him nearly dead from another hemorrhage, which must have carried him off, had not a patient in the ward jumped from his bed, and applied his fingers to the wound. The artery was now carefully examined, and as it appeared to be perfectly healthy, another ligature was put on about half an inch higher up, and all hemorrhage thus checked. The patient was quite collapsed, pulse scarcely felt at the wrist, hands and feet cold, face bedewed with a cold sweat. Wine was liberally administered, and hot bottles were placed to the feet. He remained for three or four hours in a very precarious state; but at the end of that time he began to rally, and was able to take some jelly. He was ordered to be kept perfectly quiet. At one P.M. his father was allowed, without the knowledge of any proper authority, to go into the ward, and his presence so excited the poor fellow, that he went into a kind of convulsive fit, and hemorrhage suddenly took place again. Mr. Simon cut down quickly and skilfully upon the subclavian artery, and placed a ligature upon it; but the patient was pulseless when this was done, and he died in a few minutes.

Remarks.—This case presents features of great interest. In the first place, the nature of the injury was such as is not often met with, although mutilations of the same kind, in a less degree, are often happening to those who are employed about machinery. From the great extent of injury, and from the length of time during which the patient was kept in his horrible position, one would have expected an immediately fatal result; but the little amount of shock he sustained, and the quick rally from the effects of try surgeon removed tho patella, together with the extremities of the femur and tibia, and since that time it is well known how the shoulder, elbow, hip, and ankle joints have been well and successfully excised, to the saving of many a useful limb. Various operations have been performed upon the ankle joint, the most important being that of the two Moreaus—viz., the excision of the lower extremity of the tibia and fibula; portions of the other bones entering into the formation of the foot and ankle have been removed by the gouge and the saw; but there is no case on record of the entire removal of the two important bones of the foot—the astragalus and os calcis; and therefore I think it desirable to report this case, in which that operation was most ably and successfully performed by Mr. Thomas Wakley, and which I have had an opportunity of watching throughout. The failing health of the man, and the positively ascertained disease of the two bones, rendering an operation of some kind imperative, it became a subject for consultation to determine what the nature of that operation should be. The question of removing the leg below the knee the patient had himself already disposed of by positive refusal at another hospital. The removal of the whole foot, upon Mr. Syme's plan, was discussed; but Mr. Wakley, impressed by the man's desire to retain as much as possible of the limb, decided upon the hitherto unattempted removal of the os calcis and astragalus—thus gratifying the wishes of the patient by preserving his foot, and hopefully leaving time to show how far uselessness and power might be restored to the then useless member. The great objection hitherto to the excision of the astragalus and os calcis has been, that the posterior tibial artery, being of necessity sacrificed, it was considered impossible, from the immediate contiguity of the anterior tibial to the bone, to avoid wounding that artery, thereby cutting off the great supply of blood to the foot; for the anastomoses of the smaller arteries could not be sufficient to prevent the death of the anterior remanent portion of the foot. This difficulty, however, was most successfully overcome; the artery which was seen pulsating against the flat blade of the knife, was dissected carefully away from the bone, and remained intact. The result of this operation will, it is hoped, justify its universal adoption in similar cases. Small abscesses have formed at intervals, leaving little sinuous openings, such as are recorded by all who have written upon the excision of scrofulous joints, owing, doubtless to the long-continued disease of the soft parts. These have, however, now all healed: there is perfect flexion and extension of the foot; and with the aid of a high heeled shoe he is enabled to walk about, and has returned to his employment in perfect health.

Lancet, July 1, 1848, p. 5.

76.—CASE OF COMPOUND FRACTURE AND DISLOCATION OF THE ASTRAGALUS.—By ——— Faircloth, Esq.

[The patient, a lad 14 years old, was riding a vicious horse, which fell over on its side, and crushed his left ankle:]

The astragalus was dislocated from its connexion with the os calcis, and this articulating surface turned outwards through the lips of the wound. The bone was not separated from its attachments to the tibia and fibula, nor from the scaphoid anteriorly, but to allow the bone to turn half round, the neck had given way transversely. Both the anterior portion of bone, which remained *in situ*, attached to the scaphoid, and the other larger portion were chipped or broken more or less.

Treatment.—After a very careful examination of the parts, the foot, the vessels, and the boy's state generally, it was resolved to try and save the limb. The dislocated portion of the astragalus, (amounting to four-fifths of the whole of that bone,) was carefully detached from the tibia and fibula, and these bones let down upon the calcis. The edges of the wound were brought together with three or four stitches and plaster, a compress of lint was placed over them, covered with oiled silk, confined with a turn or two of the bandage, and the whole secured in Macintyre's splint. During the first week he suffered from irritative fever, but much less so than might have been anticipated. He took salines and aperients. &c., as required. There was very little oozing of blood after the first few hours, but synovia was discharged in considerable quantities. The treatment was persevered in, the wound being dressed still with dry lint under oiled silk, as often as necessary until about fourteen days, and the splint itself was of course re-applied. This was done continually until about seven weeks from the date of the accident, when it was discarded, and an inside wooden splint with a foot-piece substituted for it, and a bread poultice employed. At the expiration of another week this support was removed, the limb bandaged, (a pad of lint only, being used for dressing) and a stirrup of paste-board passed under the foot, and continued up either side of the leg. He now got up and walked about, aided with crutches, the foot being supported in a sling. Seven days after this time he began to try and accustom himself to bear slightly on the foot. He soon left off one crutch and used a stick. The wound was touched with sulphate of copper from time to time, and only covered with lint.

November 6th. He now walks with a crutch and stick, when going any distance, and walks well. The ankle is almost motionless as regards flexion and extension.

April 10, 1848.—Walks well with a stick, frequently without one; the limb is nearly an inch shorter than the opposite one. Flexion and extension movements of joint increase.

Mr. Image related a similar case, and a discussion arose about the propriety of removing the bone in these cases, which Mr. Image remarked was about an equally divided point in British surgery. He thought his case, which was fatal from sloughing and consequent irritation, fever, and prostration, would have had a better chance of recovery had the bone been removed. *Prov. Med. and Surg. Jour., July 12, 1848, p. 365.*

77.—ON AMPUTATION OF THE FINGERS AND TOES.—By G. Williamson, Esq., Staff Surgeon, Fort Pitt.

During the last seven years I have been in the habit of operating in the manner about to be described. None of the methods are strictly new, but are modifications of those generally performed. They appear, however, to possess several advantages.

If a portion of a finger is to be removed at the articulation of the phalanges, a common narrow, sharp-pointed bistoury is pushed from one side of the finger to the other, in front of the joint, and the flap made; the knife is now laid perpendicularly upon the lateral ligament, then brought across the joint, and the other lateral ligament cut; by this proceeding the joint is at once opened, and nothing remains but to divide the skin posteriorly. In amputating between the first and second phalanges, transfixion is made opposite to the large fold in the integuments in front, and the joint is at once come upon, as the two exactly correspond. The articulation between the second and third phalanges is one line in front of the fold. By cutting into the joint posteriorly there is always considerable difficulty in getting the knife between the bones, so as to make the flap in the palmar aspect; in consequence of the extensor tendon having been divided, the flexor contracts and drags the phalanx which is to be removed in front of the one which remains. The flap in the palmar aspect being made first, that difficulty is avoided, and the operation is performed with more rapidity and ease.

In removing the whole of the finger the method adopted is this. The point of the knife is laid on the skin, half an inch above the articulation, carried down straight over it, and then brought by the side of the finger into the large fold in front, and continued upwards on the opposite side to join the incision on the dorsum. This incision is performed by one continuous sweep from left to right, without removing the knife. The finger is now pressed well out so as to put the ligaments on the stretch, the joint entered, and the operation concluded.

Having determined previously to remove the head of the metacarpal bone along with the finger, the same mode of proceeding is adopted, without, however, opening the joint. The incision is commenced on the dorsum, about an inch and a half above the joint, carried straight down, then brought round into the large fold in the palm, and continued upwards to where it began; the blade of the knife is now placed parallel with the metacarpal bone, and carried round its head from right to left, and brought back in the reverse manner, and the bone divided by the forceps. By this method there is no cicatrix in the palm, the flaps are smooth and regular; the operation is also quicker in its performance, and leaves a much better and neater covering than by the mode usually followed.

When amputating the thumb and metacarpal bone, the operator stands either on the inner or outer side of the arm, but I prefer the inner side as most convenient. The point of a long, narrow, straight bistoury is entered opposite to the articulation of the metacarpal bone and the trapezium, passed under the adductors, and its point made to appear in the folds of integuments betwixt the thumb and fore-finger, and by cutting outwards a flap is formed; the knife is now laid upon the angle of the incision, between the thumb and finger, and continued over the dorsum of the bone to the part where it was entered to transfix. The thumb is then firmly grasped by the operator, and the soft parts divided down to the articulation, which is now disarticulated with great facility. The result of this operation is exactly the same as that recommended by Mr. Liston. One of the chief points to be attended to before commencing an operation, is to have a good position for its performance: in Mr. Liston's method the surgeon stands in front, and is, consequently, very awkwardly placed for disarticulating the metacarpal bone; whereas, by standing behind, the operator has the power of putting the muscles and ligaments on the stretch, and dislocating the bone with great facility.

For the removal of a whole toe the same oval method, as it may be called, is adopted. It is here of still greater advantage, as there is no cicatrix left in the sole of the foot to annoy the patient when walking. The metatarso-phalangeal articulations of the small toes are deeply seated in the ball of the foot, and the knife must be carried by the method usually practised to the extent of two inches into the sole to reach the joint, and, on disarticulating the bone, the integuments are notched and cut in a very awkward manner; in the method recommended, these objections are removed.

In amputating the finger, the head of the metacarpal bone should always be removed; but in the toes it ought, if possible, to be preserved, especially that of the great toe, for the purpose of giving greater support in walking. The toes, with the whole of the metatarsal bones, can be removed in the same manner; the great and little toes are those that most frequently require to be amputated; this can be effected by making a straight incision along the dorsum, brought down into the fold in the sole, and terminating in an acute angle near its commencement. The bone is then cleared and disarticulated. *Medical Times, May 27, 1848, p. 56.*

ORGANS OF CIRCULATION.

78.—ON THE SOUNDS OF ANEURISM OF THE AORTA.—By Dr. Bellingham.

[The following conclusions respecting the sounds of the heart and of aneurism of the aorta, have been arrived at by Dr. Bellingham:]

1st. That a double, not a single sound, characterizes aneurism of the arch of the aorta, which closely resembles the double sound of the heart, and may be termed its *normal* sound.

2nd. That the normal double sound of aneurism of the arch of the aorta has its cause in the friction between the blood and the lining membrane of the orifice and parietes of the sac, because there is no other agency to which it can be referred.

3rd. That the normal second sound of aneurism of the arch of the aorta is caused by the regurgitation of the blood into the sac from the aorta and and large vessels which arise from it.

4th. That the first, or the second, or both aneurismal sounds, may be replaced by a murmur, which may have either a blowing, sawing, or filing character: and that such murmurs may be regarded as the *abnormal* sounds of aneurism of the arch of the aorta.

5th. That the first aneurism sound is much more frequently superseded by a murmur than the second, because the force with which the blood is transmitted to the sac by the left ventricle is much greater than that with which it regurgitates into the sac at the period of the ventricular diastole.

6th. That the abnormal sound of aneurism of the arch of the aorta, equally as its normal sounds, are caused by friction between the blood and the orifice or parietes of the sac; and that they are nothing more than exaggerated normal sounds—exaggerated, because the degree of friction is then increased.

7th. That in aneurism of the arch of the aorta pointing externally, the sound is not only always double, but a double impulse is frequently also perceptible to the hand.

8th. That the second impulse of aneurism of the arch of the aorta has its cause in the same agency which gives rise to the second sound; consequently neither a double sound nor a double impulse are perceived in aneurism of the abdominal aorta, or of any of its branches.

9th. That the phenomenon known under the name of Frmémissement Cataire, or purring tremor, whether it occurs in an aneurism or a large artery, is nothing more than the pulse of aortic regurgitation on a large scale; consequently that it is a sign of regurgitation into the ventricles of the heart, into an aneurismal sac, or into a large or a dilated artery.

10th. That the remarkable resemblance between the normal and abnormal sounds of aneurism of the arch of the aorta, and normal and abnormal sounds of the heart, renders it probable that the mechanism of their production is the same.

11th. That the abnormal sounds of the heart, having their seat at the orifices of the ventricles, and being the result of increased friction between the blood and the parts through which it passes, are (like those of aneurism of the arch of the aorta) to be regarded as nothing more than exaggerated normal sounds.

12th. That the impulse of the healthy heart, like that of aneurism of the arch of the aorta pointing externally, is *double*, not single; and that in certain abnormal conditions of the heart, this second impulse becomes very distinct, when it has been termed "the back stroke of the heart," or "the diastolic impulse."

13th. That the second impulse of the heart (like that of aneurism of the arch of the aorta) is felt exactly at the period of the second sound; and both sound and impulse appear to be produced by the same agency.

14th. That as sounds almost precisely similar to those of the heart are developed in an aneurismal sac, which has neither muscular walls nor a a valvular apparatus at its orifice, the latter do not appear to be as essential to the production of the normal sounds of the heart as most writers suppose.

15th. That the ordinary theory of the heart's sounds, which refers the normal sounds to one cause, and its abnormal sound to a totally different cause, fails to explain several phenomena connected with the heart's action and sounds.

16th. That the theory of the mechanism of production of the heart's sounds, laid down in the preceding pages, satisfactorily explains every phenomenon connected with the normal and abnormal sounds of this organ.

Dublin Medical Press, *June* 28, 1848, *p.* 495.

79.—NOTE ON THE SUPPRESSION OF HEMORRHAGE.—By Dr. Knox.

Mr. Abernethy taught me, at least two great principles, which I have never forgotten. First, when you attach much importance to the doing of anything, you had better do it yourself; this inestimable maxim will apply, I believe, to most affairs in life. Secondly, when there is bleeding from a wound, fresh or otherwise. and you have reason to believe that it comes from a vessel of dangerous magnitude,then lose no time in securing it in the usual way, by efficient pressure against a bone, or by ligature; but if you cannot make efficient pressure, and yet believe that it is but a muscular or other small thread which has been wounded, then refrain from all pressure and leave it to simple exposure to the fresh air, aided, as the case may be, by a wet rag, rest, and a favourable position.

Medical Times, *April* 15*th*, 1848, *p.* 477.

80.—AN EASY MEANS OF RENDERING THE ULNAR ARTERY MORE ACCESSIBLE.—By M. Malgaigne.

The means suggested by M. Malgaigne, the efficacy of which the reader may at once test upon his own person, will be found of great utility, when circumstances prevent our feeling the pulse at the radial artery, or when it is desired to take up the ulnar. He thus describes it:

"I have several times had occasion to place a ligature around the ulnar artery for lesions of this vessel; and when the cellular tissue is gorged with effused blood, and it is necessary to seek it at a considerable depth, I do not hesitate to term it a very difficult operation. Perhaps the means I am about to state will assist in removing the principal difficulty, which especially depends upon the depth of the artery. If the fingers and hand are turned forcibly backwards upon the dorsal aspect of the forearm, the relations of the ulnar artery become surprisingly changed. The deep-seated muscles upon which it lies are forcibly raised, and cause a sensible projection under the skin. The tendon of the flexor carpi ulnaris, on the contrary, retreats inwards and backwards; so that the artery, which, in the natural position of parts, is partly concealed by it, is now forced to a much more anterior plane, and lies four or five millimetres on the inner edge of the tendon. In many subjects it becomes more superficial than the radial, and it may be seen raising the skin at each pulsation.

In traumatic lesions of the vessel, the same position brings the wounded extremity of the vessel towards the surface, and enables us to seize it; and in any case, when we wish to pass a ligature around the vessel. there will be no longer occasion to denude and draw away the tendon of the flexor.—*Revue Medico Chirugicale.* *Brit. and For. Med. Chir. Rev.*, *July*, 1848, *p.* 265.

81.—ON DIVISION OF THE FALCIFORM BORDER OF THE FASCIA LATA, FOR VARIX OF THE SAPHENA VEIN.—By Dr. W. B. Herapath, Bristol.

Without entering into a discussion of the various causes productive of a varicose state of the veins of the inferior extremities, yet I hope to be able to show that there is one cause which has hitherto escaped the attention of surgical authors, and that it also admits of an easy remedy.

Varix has been too generally thought to depend upon an imperfect condition of the valves of the venous trunks. That this alone is the cause, in some instances, I will not dispute; but if pressure exist upon the vein at any point intermediate between its radicles and the right side of the heart, distension of the distal portion will be produced to such a degree, that the valves can no longer close the dilated vein; but remove the cause of the enlargement, and the valves again become capable of resuming their functions.

The superficial cutaneous veins are most commonly affected. These are the internal and external saphena, both of which have to pass through apertures in the deep fascia, in order to reach the larger trunks, into which they deliver the circulating current. Now should these apertures at any time be too small to allow the passage of the quantity of blood carried by the veins, distension must ensue, and varix result.

The case detailed was purely a varicose state of the internal saphena, but it is possible that the external saphena might be also varicose in the same subject, and require a distinct operation for its cure; but should the popliteal vein be also varicose, the seat of the obstruction would of course be on or above the external iliac vein, and that remedy must be used which may be applicable to the circumstances of the case.

The operations hitherto adopted for the removal of a varicose state of the saphena relieve by *obliteration* of the vein; consequently advantage is taken of anastomotic communications, and the circulating current is simply directed into other venous trunks. But the plan which I have proposed and tested by experiment is more philosophical, as it restores the circulation in the natural direction, by removing the cause of the obstruction. It is an operation devoid of danger when carefully performed, and therefore when applicable, it presents additional advantages over those hitherto proposed, as they nearly always give rise to more or less inflammation of the veins, which has not unfrequently been followed by fatal consequences.

[The case was one of a man 24 years of age, in whom a varicose state of the veins of the left leg and thigh came on after wearing a truss for a few years, for inguinal hernia. The distension was very great, but was confined to the internal saphena and its branches; and Dr. Herapath was led to conclude, from several circumstances, that the obstruction was not higher than the saphenous opening, and accordingly proposed an operation for the relief of the disease. Dr. Herapath says,]

On April 27th, I proceeded to perform the operation of dividing the falciform border of the fascia lata, assisted by my friend Mr. Edward Martin, who fully concurred with me in adopting the plan, and also by my pupil. The patient was placed in the same position as in the operation for femoral hernia; and as he had requested that ether should be administered to him, Mr. Martin kindly undertook the management of this part of the proceedings. When he had become thoroughly under its influence, I pinched up a fold of skin between my fingers sufficiently large, and then transfixed and divided it with a pointed bistoury; an incision three inches in length was thus obtained obliquely upwards and inwards, immediately over the swollen termination of the saphena vein. The superficial fascia was remarkably thin at this spot, and having carefully dissected it away from its attachment to the falciform border, and then with the pointed bistoury carefully passed *directly upwards* immediately beneath the iliac layer of fascia, (the vein being depressed and protected by my left fore-finger,) I divided the crescentic border of the saphenous opening to the extent of half an inch, which of course considerably enlarged the aperture, and at once removed the stricture, and the varix immediately disappeared. At this stage of the operation, the patient most unexpectedly gave a kick, the point of the bistoury penetrated one of the abdominal branches of the saphena, probably the superficial epigastric, and hemorrhage to a greater extent occurred than the operation necessarily involved. Pressure with the thumb immediately controlled, and a sponge full of cold water soon stopped it. About two or three ounces of blood were lost.

The wound was closed by two points of suture, and drawn together by adhesive plaster, and the whole covered by a pad of wet lint, held on by a few turns of a bandage. The patient was carefully drawn into bed, and quietness was peremptorily enjoined. The wound healed kindly almost by the first intention, and without a bad symptom.

May 11th. He was allowed to get up; *no enlargement of the veins occurred*, although no support has been hitherto applied.

14th. He has been out walking for a short time; no sign of the return of the varix appears. There is a hardened clot, the size of half a pea, in the situation of the swollen portion of vein, at the internal condyle; the other portions of the venous trunk are but little larger than in their natural state, so that the operation may be distinctly proved to have been perfectly successful. Had I not depended too much upon the peculiar quiescent power which ether generally produces upon the muscular system, the little accident which took place would not have occurred, and but little blood would have been lost. In future it will be advisable to use a probe-pointed bistoury at this stage of the operation.

Prov. Med. and Surg. Jour., July 26, 1848, *p.* 389.

82.—ON OPENING THE TEMPORAL ARTERY.—By Bransby Cooper, Esq.

The best mode of performing the operation is to make an incision into the skin, so as carefully to expose the artery, which must then be raised from the aponeurosis of the temporal muscle by a probe passed beneath the vessel, which is then punctured by a lancet, as in venesection. When the necessary quantity of blood has been withdrawn, the artery is to be completely divided by a probe-pointed bistoury, and the truncated extremity compressed by a dossil of lint, so as to prevent the recurrence of the bleeding. If the artery be not divided, but a compress merely applied over the puncture, an aneurismal tumor is almost certain to form, rendering a surgical operation necessary for its cure. I have myself known very many instances in which such a result has occurred. The treatment consists in applying pressure on the temporal artery, both on the proximal and distal side of the aneurismal sac, which is to be laid open, so that the whole of the coagulum can be turned out, after which each end of the artery is to be secured by ligature. *Med. Gaz., June* 9, 1848, *p.* 968.

83.—ON THE USE OF OIL OF TURPENTINE IN HEMORRHAGIC DISEASES.—By Dr. L. Percy, Lausanne.

[This remedy, not a new one, for it has been noticed by several writers, has been used by Dr. Percy with the best results. We are told that,]

The cases in which its use is indicated are those of passive hemorrhage. It must not be employed in cases where there is an active determination of blood, and where the pulse is full. When the discharge of blood is the consequence of organic disease, as of disease of the uterus, or of tubercular disease of the lungs, the action of the remedy is not so efficacious; but the author has seen a case of scirrhus of the womb, in which the hemorrhage was for some time stopped by this remedy. The author has found the action of turpentine oil very rapid, an effect being manifest in a few hours, often after one small dose. In order better to ascertain its power, he used it alone, without having recourse to local astringents or cold applications, where he could do so without fear of endangering the life of the patient. He had used it most frequently in cases of menorrhagia and epistaxis; but he mentions, that it appears to him to be particularly applicable in the cases of hemorrhage attending typhus. He noticed the fact that turpentine exerts different actions on the body according as it is taken in large or small doses, being more readily absorbed in the latter case; and he remarks, that as its beneficial action in cases of hemorrhage must depend on its being absorbed, the inference would be drawn that the doses in which it is given in such cases ought to be small. His experience confirms this conclusion. He has always found a dose of from eight to thirty drops sufficient. The best vehicle for it is almond emulsion, with a little gum arabic. When there is pain in the abdomen, a few drops of laudanum may be added.

[This remedy will now be very inferior, in many cases, to gallic acid and matico.] *Medical Gazette, July* 21, 1848, *p.* 122.

ALIMENTARY CANAL.

64.—ON SOME POINTS IN THE TREATMENT OF HARELIP.—By H. H. WALTON, Esq, Surgeon to the Central London Ophthalmic Hospital, &c.

[Mr. Walton's observations refer to that form of harelip which is accompanied by cleft maxilla, one of the edges of the divided alveolus projecting. Respecting the treatment of these cases, he says:]

The usual practice is to excise the bit; and from what I have read and seen, I know that the bone-forceps have at times been freely applied. But obviously a great ill is incurred by the loss of bone from a part where so many and such important services are required of it. It is then to save and make available this piece of bone, which would otherwise be useless, and at the same time an obstacle, that I write.

During the last winter, Mr. Fergusson was kind enough to allow me the opportunity of seeing him operate for a double harelip, involving the maxilla on each side; and Gensoul's method of bending back the central portion of bone was resorted to. Shortly after I availed myself of the information I had gained; for three cases of harelip were brought to me within a few weeks of each other, each with labial and maxillary clefts, two with entire division of hard and soft palate, one with the alveolus only divided. In all the protruding bone was very prominent, and the deformities bore a great resemblance to each other. These did not admit of Gensoul's method, but with a slight alteration I was enabled to apply his principle.

I shall not uselessly go into the steps of operating on the lips; enough to say that it is effected with a small scalpel and my fingers, and that I detach the soft parts from the subjacent bones more extensively than is generally done. I now cut through the protruding alveolus in its entire thickness, applying the bone-forceps at the spot about corresponding to the space between the first and second incisive (and it has happened in all the cases that the deviation from the natural contour commenced just about there), and bend back to the desired level the partially detached portion, which, I may remark, contains the rudiments of the two front teeth.

Dividing the alveolus at the part described may not be without benefit, since probably it interferes as little as it is possible with the future teeth. The soft parts can now be brought together with as much facility as when only fissure of the lip exists. Not much force is required in thus dealing with the bone after the forceps have been applied. There is no fracture, but a yielding, which I imagine may be ascribed to the yet imperfectly ossified incisive and palatine portions of the maxilla. I retain the lip *in situ* with pins and the twisted suture, according to the ordinary method. Of the after treatment I have no remarks to offer. There remained in one of the cases an irregularity at the free margin of the alveolus, the depressed portion descending a little below the natural line; but I did not deem any interference with it necessary.

Authorities differ about the age when the operation should be performed; the majority advise a late operation, some preferring the age of two years, some even later than that. If a portion of bone is to be removed, I do not think it matters much about the delay; but I hold it to be necessary to insure success with the plan I recommend, that the operation should be resorted to at some period before dentition; and I should say that after the child is a month old the sooner it is done the better. One reason assigned for delay is, that very young children cannot bear the shock and loss of blood consequent on the operation. With modesty I would say that I believe the fear to be greatly exaggerated. We know that infants undergo more severe operations with success. On this subject Mr. Fergusson says, "From all my reflections and experience on the question, I am more than ever disposed to recommend a very early operation. Within the last twelve months I have operated on five infants, all of them under three months, with the most satisfactory results; and these cases, with others which I have previously had, are sufficient to induce me to pursue a similar practice in all instances of the kind which may come under my notice, unless there be some apparent indication not to interfere."—And again, "I once asked the learned Dr. Abercrombie, of Edinburgh, the result of his experience on this point," *i. e.*, convulsions ensuing in children while undergoing operations, "and he could not bring a single instance to his recollection where convulsions could be fairly attributed to an operation." Many instances have been recorded of infants of only a few days old having been operated on for harelip with success: other objections I shall not answer. The respective ages of my little patients were four, six, and eight weeks. All were unusually small and thin, one peculiarly so. I have operated on children under six months, and with good results. In the case with the alveolus only divided, and the palate not implicated, there is not the slightest aperture remaining in the bone, for the piece pressed back accurately filled the chasm. The others are less perfect, but the little gap that exists is very trifling.

It remains for me to say that the result of my cases has been fully satisfactory. When similar affections come under my care, I shall use the same means, and not, as I have in other instances, remove any portion of bone. *Medical Times, June* 16, 1848, *p.* 107.

85.—SUGGESTIONS RESPECTING OPERATIONS ON THE LIPS.—By T. Paget, Esq., Leicester.

In excisions, the hand of an assistant at each angle of the mouth, to compress the arteries, is often considerably in the way, and may be better employed. I have therefore, on the last fifteen or twenty occasions, applied, at each extremity of the lip to be operated upon, a strong and large pair of Dieffenbach's forceps, which have effectually controlled the hemorrhage, and left the hands of the assistant at liberty for other purposes. I have even operated without other assistance than that of the forceps. Their concave margin is towards the ear, and after applying, it is well to give them a slight pinch, to increase the compressing force. Messrs. Weiss and Co. have made them for me, and know the size and strength required.

Another trifling suggestion is the adoption of thin steel pins, instead of the usual silver ones, cutting off the points with pliers, as in operations upon the saphena. The only other innovation I have to recommend upon the operation, is one I have practised for many years, an imitation of the veterinary mode of producing compression and co-aptation after phlebotomy,—namely, the use of strips of lint, twisted about the pins, instead of thin ligatures. The lint should be of the firm kind, called "endless," and the strip about half an inch wide. Its value lies, of course, in the wider and more serviceable compression it gives; indeed, by two pins, with lint applied to each in a crossed form once, then two or three times tightly coiled round at the base, and tied, the whole incision is occupied, extended compression given, and the dressing completed. The lints being soaked in blood during their application, will even adhere, after careful removal of the pins, until cicatrization is perfect.

Provincial Medical and Surgical Journal, May 31, 1848, p. 289.

86.—ON THE PROPER PERIOD OF LIFE FOR OPERATING ON HARE-LIP.—

By BRANSBY COOPER, Esq., F. R. S., &c.

"For my own part," says Mr. B. Cooper, "I agree entirely with Sir Astley Cooper in regarding it as unsafe to operate on infants before weaning: firstly, because, from their excessive irritability, they are totally unable to sustain any loss of blood; and. secondly, because after the operation they are rendered incapable of sucking; and, indeed, Sir Astley has pointed out in his lectures the frequency of the failures he met with in his own practice in operating upon infants shortly after birth. I consider the best time, under ordinary circumstances, to be soon after the child is weaned, as it is then capable of receiving nourishment independently of its mother, and has overcome the distress incidental to the separation from her.

At a more advanced age, as the development of the upper jaw increases in proportion to the growth of the teeth, the deformity is very much aggravated, particularly in case of complex hare-lip. In addition to this, children of five or six years old can offer resistance during the operation, and are also less patient under the restrictions necessary during the progress of reparation. The twisted suture is, I think, preferable to the interrupted; but, from what I have seen of the practice of my colleague, Mr. Cook, I am led to consider the uninterrupted suture better than either."

Medical Gazette, June 23, 1848, p. 1056.

87.—ON THE TREATMENT OF NASAL POLYPI.—By WM. COLLES, Esq., Surgeon to Steevens' Hospital, Dublin.

[Speaking of gelatinous polypi, Mr. Colles says :]

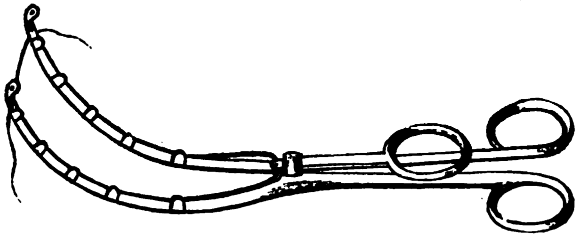
These tumors are now in general removed by means of the forceps.—We seize them as near the root as possible, and by drawing them out, and at the same time twisting the forceps, tear through their attachment. The use of the forceps is, however, liable to several objections: 1, Though we see the polypus plainly, yet when we introduce the forceps, the blades of the instrument and the surgeon's hand obstruct the view; 2, The opening the blades of the forceps is attended with pain, from the pressure on the sides of the nose, and often causes laceration of the mucous membrane; and, 3, If the nose be at all distended, so that the internal part is much larger than the orifice, we cannot open the forceps sufficiently to get one blade on each side of the polypus ; we are therefore compelled to seize the polypus at its larger, or bulbous end, and are able to remove only portions of the tumour at each time; hence the operation is tedious and painful, and often attended with considerable hermorrhage.

For the last two or three years I have been in the habit of employing, in this operation, an instrument which is free from many of the objections to the forceps, and which I first saw with Mr. Cusack, but was, I believe, originally described by Dr. Robertson, of Kelso, in the Edinburgh Medical and Surgical Journal, for 1803. It resembles, on a larger scale, the snare for the removal of polypi of the ear, of which a drawing and description was given in a previous number of this Journal by Mr. Wilde. We open the wire at the end of the instrument, introduce the noose beneath the polypus, and endeavour to get it as near the attachment as possible; when in this position, by drawing down the handle of the instrument the wire is tightened round the root, and a very slight force, with some rotary motion, will suffice to remove the entire polypus.

[These polypi, however, are very liable to return; and the liability cannot be lessened by any means that Mr. Colles is acquainted with. When polypi project backwards from the posterior nares, and occupy the upper part of the pharynx, their removal is often a very difficult matter. They may exist for a considerable time undetected; and therefore it is important, whenever symptoms of obstruction of the nose are met with, to pass the finger from the mouth behind the soft palate, so as to ascertain whether a polypus exists. When polypi in this situation are small, numerous, and soft, we may attempt their removal by the forceps: and Mr. Colles recommends as the best form of instrument, a curved forceps, with the blades opening in front and behind. But when the tumour is single, firm, and large, the ligature is to be preferred. Mr. John Bell employed for this purpose, a silver wire, which he passed through the nostril, and then with the points of his fingers thrust deep into the throat, carried it over the tumour. But this is a very difficult operation, and Mr. Colles describes an instrument which he states, will much facilitate the application of the ligature. Mr. Colles says:—]

The great difficulty of passing the ligature round this polypus arises from these facts:—the tumour grows from some part above the floor of the nose, and hangs down behind the soft palate; a ligature, therefore, passed along the nostril, and brought out at the mouth, will lie on these parts, and will be in front of the tumour. To pass it round the polypus, therefore, the noose must be passed from the mouth below, and then behind the polypus, and so expanded as to pass also on each side; but we find that there is a spasmodic action of the parts forming the opening between the mouth and pharynx, which is induced by the presence of the ligature or of the surgeon's finger; so that, no matter of what consistence the ligature is, or what shape we give the noose when in the mouth, when passing this part it will be closed, and thus remain in front of the polypus, and the difficulty will be increased in proportion to the size of the tumour.

In order to obviate, in some respects, these difficulties, and to facilitate the operation, I have (with the assistance of Mr. Read, the cutler, of Parliament-street,) and after various modifications, constructed the instrument here figured.



It resembles a curved forceps, so joined, that, on closing the handles, the blades separate; across the end of each blade a semicircular notch is formed, sufficiently large to allow the ligature to move easily; this notch may be closed by means of a wire running in front of each blade, which can be passed across the notch by means of a ring moving at the hinge of the instrument.

In performing the operation, the selection of a ligature is a matter of some importance: a metallic one is liable to snap across on being tightened or twisted, and a cat-gut one, on being moistened, becomes too pliable and apt to twist, therefore, as neither will answer singly, I generally make use of one of thin silver wire and cat-gut twisted together; this gives a firm, consistent, and strong ligature. This ligature is readily passed through the nose and brought into the mouth without the intervention of any other instrument. We double the ligature, give it a slight curve, and pass it along the floor of the nose; the patient will soon be aware of its presence in the throat, where it will produce cough, and some convulsive efforts; on opening the mouth we readily see it, and by means of the finger, forceps, or blunt hook, we can bring it forward into the mouth, when we apply the supplementary ligature to draw it back if necessary. We then open the apertures in the ends of the forceps, the blades being closed, put the ligature into the open notch in the instrument, where we secure it by pushing up the wires. If the tumour be large and visible, it will assist the operation to pass a hook or forceps through the noose of the ligature, and seize the tumour, and draw it forwards and downwards: we thus render the tumour fixed, make room for the free motions of the instrument behind it, and allow the ligature to run smoothly over its sides; then, with the hook in the left hand, the surgeon passes with the right the closed forceps, armed with the ligature beneath and behind the polypus, and, depressing the handle, carries the ends of the instrument so as to be on a level with the insertions of the tumour; he then closes the handles, by which he opens the blades, and spreads out the noose of the ligature, when an assistant, gently pulling the ends hanging from the noose, causes it to glide along the ends of the tumour. By drawing back the wires, by means of the ring in the instrument, the ligature, thus set free, is left encircling the insertion of the tumour, and the instrument can be removed. It now remains but to fix the ligature, and tighten it so as to cause the death of the tumour; this is generally effected by means of the double canula, or what I prefer, that of Græfe, where the ligature is fastened to a button, moveable along the canula by means of a screw, for with it we can tighten the ligature without twisting it or the canula, which latter proceeding is always attended with considerable pain to the patient.

Having thus effectually applied the ligature, and insured the subsequent separation of the tumour, there remains one important proceeding before concluding the operation; that is, to pass a ligature through some portion of the tumour, and leave it hanging from the mouth; for it has happened that without this precaution the tumour has separated while the patient was asleep, fallen into the pharynx, and, if small, has been swallowed, or, if large, has almost suffocated him. With this instrument, or some modification of it, I have operated in four cases: in one the tumour was as large as an orange, and there was not room for the finger to get behind it, even if the finger was long enough; in two others, one the size of a walnut, the other somewhat larger, it also proceeded most satisfactorily; in one small one I only snared half of the tumour, and I could not afterwards pass a ligature on the remaining portion of it, it was so small. This is the only case where the operation did not succeed perfectly.

The foregoing remarks refer to one form of polypus, of which there are different species;—it is that which is denominated the benign or non-malignant polypus, which, small at first, may increase without undergoing any alteration in its character so as to cause the death of the patient; it destroys solely by secondary effects, such as pressure on the brain, or some vital part. But besides this, I have no hesitation in saying that there is another form, a malignant polypus, which is malignant from its very commencement, and will most certainly end in the death of the patient, for its course cannot be arrested. Palliative treatment may render its progress slower, but severe measures will only hasten its fatal termination; it destroys not from its bulk, but from a malignancy inherent in its nature, which acts as a poison on the constitution. Of this description I have already seen three well-marked cases. I would not have made any remark on this form of polypus, but that Mr. John Bell, in his otherwise excellent work on this subject, denies the existence of it. He says a benign polypus may so increase as to destroy life, and hence may be termed malignant, and he uses much plausible reasoning in his endeavour to establish this as the only form of polypus, whereby he might lead an inexperienced surgeon to adopt the very erroneous notion, that in every case of polypus he may, with impunity at least, if not with benefit, resort to a severe operation for the removal of the tumour. *Dublin Quarterly Journal, Nov.*, 1848, *p.* 372.

88.—A CHEAP KIND OF ARTIFICIAL PALATE.

[An anonymous correspondent of the Lancet says:—]

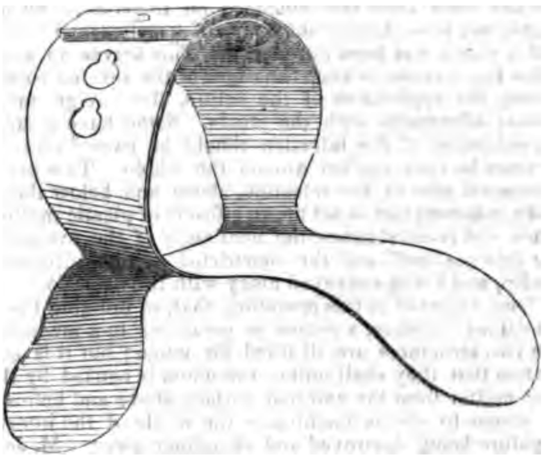
I have found the substance, gutta percha, suitable for making artificial palates, very easily moulded on a cast of the mouth into the necessary shape, and retaining its firmness and smoothness unimpaired by the temperature to which it is there subjected. Kneaded out into a smooth sheet, about the thickness of a sixpence or a shilling, and pressed into the proper form,—the edges accurately following the sinuosities of the teeth, and a hooked process or two of the same material adjusted in the usual way,—it will be found to answer very well, being smooth, light, and firm If required, a slight rim of gold, fitted to a few of the teeth, may be fixed to the edge of the gutta percha. If care be used to mould the material equably and smoothly, it will be more agreeable in the mouth than a metallic body. When the Schneiderian membrane is too tender to permit the use of the sponge and plate, a period with some patients of long duration, this simple, cheap, and effective instrument will be found valuable. It may supersede the use of the soft crumb of bread, soaked dossils of soft lint, &c., which are used as temporary expedients to close the orifice in cases where bones are coming or have recently come away. But even when the membrane has become firm, a palate of this material—with or without a piece of prepared caoutchouc adherent to the upper part of the gutta percha, so as to press into the exact shape of the orifice, and form a sort of air-tight valve—will be as agreeable to most of the patients as the instrument commonly employed.

Its advantages are, its cheapness, lightness, and absence of unpleasant taste or feeling. For poor patients, who are usually prevented, by the expense of gold or platinum palates, from obtaining relief, I hope gutta percha will be made available. In cases of congenital deficiency, fissure of the palate, &c., I think considerable relief might be afforded by attaching to a hard palate of the gutta percha an artificial soft one, of prepared caoutchouc. The caoutchouc adheres easily and permanently to the warm gutta percha, and if properly prepared, and of a suitable flexibility, thickness, and shape, it might, I should think, very materially aid the great numbers of persons who suffer from this distressing deformity. The expense, at any rate, need not henceforth prevent any one from seeking relief.

The soft palate I have not tried: for an artificial hard one I have found the gutta percha practically useful. Whether it may resist the action of the fluids of the mouth for any length of time remains to be seen. If so, I cannot see any objection to the employment of this substance for the purpose named. In the hope that it will be fully tested, and that it may, perhaps, relieve some suffering, I offer the hint to the professional public through your columns. *Lancet, June* 10, 1848, *p.* 636.

89.—NOTE OF THE MOUTH SPECULUM.—By Dr. A. Fleming.

I first saw this useful instrument about two years ago in the wards of M. Rayer, at La Charité, Paris. It consists, as the annexed wood-cut shows, of a circular band of metal (German silver) to keep the mouth open, while a broad horizontal plate, passing backwards, serves to depress the tongue. It facilitates greatly all operations on the mouth and throat, and is especially useful in children. By its aid, ulcers on the fauces may be cauterized much more accurately and more efficiently than without it. It is made of two sizes, for children and adults; and each speculum can be varied in size, to a certain extent, to adapt it to individual cases. Charrière, of Paris, has constructed a mouth speculum on the principle of his speculum vaginæ. It



is considerably more expensive than the simpler one here shown, but has this advantage, that the same instrument can be enlarged or diminished in size to suit all ages. Specimens of both forms may be seen at Mr. Young's, cutler, Edinburgh. As the mouth varies much in length in different persons, I have suggested to Mr. Young, that in future he should make the tongue portion of two pieces, which, by a simple mechanism, may be so arranged as to admit of that portion being lengthened or shortened, as occasion may require. *Monthly Journal, Sept.*, 1848, *p.* 171.

80.—ON WOUNDS OF THE INTESTINES.—By Bransby Cooper, Esq., F.R.S., &c.

[When after a wound of the abdomen, we find symptoms of wounded intestine, without there being protrusion, we must keep the patient perfectly quiet, administer stimuli if needed, but insist upon total abstinence from food for some time.]

When the wounded intestine protrudes, its contents may be perceived issuing from the wound, although the opening itself appears to be closed by the protrusion of the internal mucous membrane. The size of this opening and its direction, as to whether it be longitudinal or transverse, must now regulate the treatment to be adopted. If the wound be very small, its edges may be pinched up by a pair of forceps, and a thin silk tied round so as to include the whole of the wound; the intestine is then to be returned into the cavity of the abdomen, but must be kept as close as possible to the external wound. The ligature produces a sloughing of all the included tissues, and adhesive inflammation of the peritoneum being set up, an external wall of plastic matter is formed around the dead part, which ulcerates off into the intestines, and is carried away with the fæces. Sir Astley Cooper successfully employed this method of treatment in one or two cases in which the intestine had been inadvertently wounded in the operation for strangulated hernia.

When the opening in the bowel is large, different kinds of stitches are used to keep the edges of the wound in apposition. The uninterrupted suture, however, or glover's stitch, is, I believe, the best, but the finest procurable needle and silk must be employed; and, after the bowel has been returned into its natural cavity, the same precaution as I have already mentioned to keep it in proximity to the external wound, should be adopted. When the intestine has been completely divided by a transverse wound, various plans have been recommended for re-establishing its continuity. For this purpose, some animal substance of a cylindrical form, such as the trachea of a sheep, has been introduced. This serves as a sort of mould, and enables the surgeon to keep the edges of the severed bowel in juxtaposition during the application of the suture, the foreign substance easily passing away afterwards with the stools. Some have recommended that the upper extremity of the intestine should be passed into the lower, and that a ligature be then applied around the whole. This produces contact of the peritoneal coat of the intestine, above and below the ligature, and, as adhesive inflammation is set up, an effusion of plastic matter soon covers the ligature, and re-establishes the continuity of the external part of the canal, the ligature itself, and the constricted portion, ultimately sloughing off internally, and being conveyed away with the excretions.

It has been objected to this operation, that, in bringing the severed ends of the intestines together, a serous is presented to a mucous surface, and that these two structures are ill fitted for union; but it is not intended in this operation that they shall unite; the union is caused by the effusion of the plastic matter from the external surface above and below the ligature, and from serous to serous membrane, the whole of the intestine included in the ligature being destroyed and sloughing away. M. Jobert has proposed, as an improvement in the above operation, to invert the inferior extremity before the superior is introduced. In that case, two serous membranes are brought in contact, and the union may take place at once between them; but, under these circumstances, the invaginated portion would not be included in a ligature, but retained in position by suture.

After all, however, from the result of the experiments, it remains questionable whether, in complete division of an intestine by a transverse wound, it is not better to establish an artificial anus and leave nature to her own efforts for the ultimate restoration of the patient; and this does not indeed appear to be so difficult a process as may be supposed, particularly if nature be judiciously assisted by the art of the surgeon.

Almost immediately after the divided intestine has been replaced in the cavity of the abdomen, an adhesive inflammation shuts out the open extremities of the intestine from the peritoneal cavity, so that after a few hours have elapsed the stitch employed to secure the wounded intestine near the external wound in the abdomen may be removed, and as soon as the feculent matter passes partly through the latter the patient may be considered safe, as far as refers to the danger of extravasation of the fæces into the abdomen. But as the formation of an artificial anus renders the patient loathsome to himself, and unfitted for a social state, subsequent means must be adopted to re-establish the integrity of the intestinal canal.

With this view, one of the first steps is to diminish as much as possible a tendency which the upper portion of the bowel has to prolapsus or eversion of its mucous membrane; and this object may be attained by keeping the fæces in a semi-fluid state, and by maintaining slight pressure upon the extremity of the protruded part. The lower portion of the intestine is liable to contract at its extremity, so that the ready passage of the contents of the upper portion is prevented from passing into the lower; this may be in some measure obviated by the use of enemata, which stimulate the natural action of the bowel and prevent it from falling into the abnormal condition always produced by disuse. The strictest attention to cleanliness of the external wound should constantly be observed, otherwise the presence of the feculent matter will interfere very materially with the progress of the healing process. As the wound goes on uniting it gradually contracts into a narrow fistula: this contraction is still further promoted by gentle pressure; and, after a while, as the fæces meet with some resistance in the direction of the wound, they acquire a tendency to pass on through the natural passage—a change which is first indicated by the escape of flatus and mucus per anum; upon which enemata should be freely employed to re-establish the natural function of the rectum and anus.

By such treatment, a recent artificial anus may very generally be cured, but if neglected, the lower part becomes so much retracted, and at the same time contracted, as to render the cure almost impossible. Dupuytren has, however, proposed the removal of the obstruction termed the "eperon" by means of a pair of forceps made to include it—one blade of the forceps being inserted into the upper, the other into the lower opening of the intestine; and being closed with sufficient force to produce sloughing of the included valvular portion, after which a free communication between the two parts of the intestine will be re-established. The same attention must be paid to the external wound as under the circumstances I have before described.

In gun-shot wounds where the ball has penetrated the parietes of the abdomen and wounded a viscus, nature has sometimes effected the reparation of the part—the ball passing away with the fæces. A musket ball has also been known to penetrate and lodge in the urinary bladder, from which it has afterwards been removed encrusted with calcareous matter, the patient ultimately recovering. *Medical Gazette, Aug.* 18, 1848, *p.* 265.

91.—CASE OF OPERATION FOR THE RADICAL CURE OF HERNIA.—By Bransby Cooper, Esq., F.R.S., &c.

[Mr. Cooper thinks most of the operations proposed for the radical cure of reducible hernia unwarrantable, from the great danger of peritonitis. He was, however, once induced to perform M. Gerdy's operation for a scrotal hernia which could not be kept up. He tells us that the patient,]

Being placed on his back on a table, with his chest and thighs raised, I passed the forefinger of my left hand as high up as I could through the external ring into the inguinal canal, pushing before it a portion of the integument of the scrotum. I then introduced a director, along which I passed a needle fixed in a wooden handle, and armed with a double silk ligature. The needle was passed to the very extremity of the invaginated skin, and was pushed through the tendon of the abdominal oblique muscle and the skin and brought out an inch and a half above Poupart's ligament. One end of the silk was then retained by an assistant, and the needle drawn back, and pushed through a second time in exactly the same manner as at first, but including about four lines of the invaginated integument. The two free ends were then tied over a piece of bougie, with a sufficient degree of tension to retain the intruded portion of integument firmly within the inguinal canal. A piece of lint wrapped around a director and dipped into liq. ammon., was passed into the "cul de sac" of skin, and the surface well rubbed with it, to remove the cuticle and promote inflammation in the cutis, for the purpose of obliterating this integumentary canal, and forming a plug sufficiently firm to prevent the future descent of the hernia. The application of the ammonia produced intense pain: this was, however, relieved by opium. Four days subsequently to the operation, the ligature was removed, as purulent discharge was freely established. Pressure was kept upon the part by compresses, to promote perfect union, and in about three weeks a weak truss was applied: but he still remained in the hospital another fortnight, after which, as the hernia did not descend, he left. About two months after he had returned to his employment, which was of a violent character, the hernia partially descended; but, by the use of a stronger truss, he has ever since been able to continue at work, being, however, sometimes subject to a slight return of the affection: this man may be said to be relieved, but not permanently cured, by the operation.

Medical Gazette, Sep. 8, 1848, *p.* 404.

92.—ON THE TREATMENT OF IRREDUCIBLE HERNIA.—By BRANSBY COOPER, Esq., F.R.S., &c.

[Mr. Cooper gives the following case of the mode of treating an irreducible hernia without obstruction, the object being, of course, to convert it into the reducible form.]

A young farmer, who was the subject of irreducible hernia, was sent to me by Dr. Baddeley, of Chelmsford. The hernia was of two years standing, and so anxious was the patient to obtain relief, that he was willing to submit to any system of treatment that promised to afford it. I prescribed, in the first instance, purgatives, to produce complete evacuation of the bowels, and ordered him to remain in bed, with his shoulders and thighs raised, so as to perfectly relax the abdominal muscles. A low diet was strictly enjoined, and a grain of blue pill and a quarter of a grain of tartarized antimony given twice a day, with the intention of stimulating the absorbents to the removal of the fatty matter of the omentum. Ice was frequently applied, and also enemata, to keep the intestines perfectly empty. So anxious was the patient for the removal of his complaint, that he submitted to all these restrictions during the space of five weeks, but in that time no favorable change had been produced beyond a slight diminution in the size of the tumor. At last, quite despondent at this want of success, in a fit of impatience he one morning jumped out of bed, when, to his great surprise and joy, the tumor suddenly disappeared. He immediately applied his truss, and has never experienced the least return of the protrusion; taking, however, the precaution of always wearing a truss even in bed.

From the successful result of the treatment in this case, I have been induced to repeat it in several others, both in public and private practice, and have found it very successful. If, however, your efforts should prove abortive, and the hernia remain irreducible, an apparatus should be contrived to support the tumor and defend it from external injury; and, at the same time, the most scrupulous attention must be paid by the patient to his diet, both as to quality and quantity; for, by merely a slight inattention to the rules laid down, he subjects himself to a return of the disorder, and consequent imminent danger to his life. *Medical Gazette, Sept.* 8, 1848, *p.* 40[illegible].

93.—ON THE TREATMENT OF STRANGULATED HERNIA.—By BRANSBY COOPER, Esq.

[After speaking of the application of the taxis, and the propriety, in many cases, of an early operation, in case other means should prove unsuccessful, Mr. Cooper goes on to say,]

When symptoms of strangulation come on progressively, as in old hernia, some delay may be permitted, even beyond that time required for the application of the remedies already recommended, and even when those prove ineffectual, I have frequently succeeded by giving large doses of opium,—in some cases as much as three or four grains. Constipation being one of the most urgent symptoms of hernia, and opium having a tendency to produce that condition of the bowels, you will naturally ask for the rationale of this treatment. I believe that the opium allays irritation and checks sickness, by diminishing the antiperistaltic motion of the intestines, and thus produces a condition of quietude through the whole intestinal canal, well adapted to improve the state of the protruded parts. I have never recommended opium by choice as a substitute for the operation; but in four or five cases in which the patient would not submit to that ordeal, I have employed it with perfect success. I first acquired a knowledge of this practice from the late Mr. Bush, of Frome, in Somersetshire, who informed me that although at one time of his life he had had to perform the operation for hernia several times in the course of every year; after he adopted the use of opium, he rarely had occasion to resort to any surgical measures.

In July, 1838, I admitted a man, 64 years of age, into Guy's Hospital, who was the subject of inguinal hernia of five days' standing: he suffered from constant vomiting, insuperable constipation, and, indeed, from all the symptoms of strangulation of the bowel. I attempted to reduce the hernia, but could not succeed, and therefore proposed an immediate operation. To this the patient would not, however, accede. I then ordered him three grains of solid opium, in about four hours: the sickness was much relieved, and some flatus passed per anum, but the constipation still remained. At twelve o'clock the same night, my dresser, Mr. Coleman, repeated the dose of opium. The patient passed a very quiet night, and in the morning the vomiting had ceased, and a copious motion was passed, during which action the hernia returned into the abdomen. The patient perfectly recovered

In June, 1839, a married woman, æt. 55, was admitted into Esther ward, with a femoral hernia on the right side. The tumor was about the size of a small orange, tense, and very tender to the touch. The patient was placed in a warm bath, an enema administered, and the taxis applied, but unsuccessfully. I consequently proposed the operation: the patient would not, however, consent to it. I therefore ordered, for the time, ice to be applied to the tumor. The next day, all the symptoms remaining unaltered, I again attempted the reduction, still, however, without effecting my object; and I therefore ordered her to take four grains of solid opium. The symptoms were soon relieved; a castor oil enema was administered, and on the second evening after her admission into the hospital the bowels were slightly evacuated, and my dresser, Mr. Day, succeeded in reducing the hernia. This patient also recovered.

In another case I was sent for by Mr. Odling, to see a lady at Islington, who was suffering from all the urgent symptoms of strangulated hernia. The warm bath had been employed, ice applied to the tumor, and several attempts made to reduce it by the taxis. This treatment, however, was not successful, and as the patient would not submit to an operation, four grains of opium were given; the symptoms were soon all relieved, and early the next morning the bowels were evacuated, after which the patient herself reduced the hernia by the application of very little force.

An old gentleman, who lived in Great Windmill-street, and who had long been the subject of irreducible hernia, was suddenly seized with symptoms of obstruction of the bowels, which did not yield to the usual remedies; and as sickness, as well as other signs of insuperable constipation came on, Sir Astley Cooper was sent for. He, however, happened to be unwell, and I went in his stead to visit the patient. I ordered enemata, ice to the tumor, and calomel and opium to be taken to allay the vomiting. No relief was, however, obtained, and I consequently proposed the operation. This was at once objected to, and I was, therefore, constrained to employ some medical treatment. Four grains of opium were administered, and five hours afterwards I again saw the patient: the sickness had ceased, but no evacuation had yet taken place. I then recommended a warm gruel injection, with an ounce of castor oil, and in the evening the alvine secretions passed freely, and the patient shortly recovered.

Mr. Shelley, of Epsom, had a patient, a lady, 40 years of age, under his care, who, during three days, had suffered from all the urgent symptoms of strangulated hernia, and when first seen by Mr Shelley, she had stercoraceous vomiting. He attempted to reduce the hernia, but, not succeeding, recommended the operation. The patient refused to submit to this, and Mr. Shelley, Jr., who had been one of my dressers, and who had seen the effect of opium in one or two cases in Guy's Hospital, immediately gave the patient two grains of solid opium, and further ordered a grain to be taken every two hours. She took four doses before the sickness and pain ceased, but next day the bowels were relieved; the hernia was easily reduced, and she perfectly recovered.

Operation for Strangulated Bubonocele.—This operation consists in enlarging the opening of the internal abdominal ring through which the hernia has escaped. To effect this object, the inguinal canal must be laid open for the purpose of exposing the *intrinsic* coverings of the hernia ; an incision is made in the course of the tumor, commencing from within an inch of the internal, and extending to the external ring, cutting through the skin and superficial fascia, so as to expose the tendon of the external abdominal muscle: this tendon is then to be divided to a similar extent, and in the same direction as in the first incision. The hernial tumor, enveloped by the internal abdominal fascia and peritoneum, will now be exposed, partly overlapped, perhaps, by the free edges of the internal oblique and transversalis muscle; these may, however, be turned upwards off the tumor by means of the finger, and without cutting, so as to enable you to proceed to open the internal abdominal fascia (often termed the fascia spermatica interna). A director is now to be passed into the opening which has thus been made, and being gently pushed upwards, enters the cavity of the abdomen : the force required for this, being in proportion to the tightness of the stricture. A hernial knife is inserted into the groove of the director, and passed along until it enters the abdomen, having, consequently, been pushed beyond the point of the constriction; the cutting edge of the knife is then turned forward, so as to divide the stricture; the division being made directly upwards; and, indeed, any inward direction is to be especially avoided, owing to the proximity of the epigastric artery. The division of the stricture external to the peritoneal sac usually proves sufficient, and the hernia may be returned by gentle manipulation ; if this be effected, the operation is completed ; but if there be any adhesions between the contents of the hernia and its peritoneal sac, or any other cause which prevents the return of the hernia, the peritoneal sac itself must be laid open for the purpose of removing the obstruction.

The operation of dividing the stricture external to the sac may, I think, be looked upon as involving little more danger than the ordinary application of the taxis, for there can be no doubt that the great danger in the usual operation for hernia consists in opening the peritoneal cavity, and I have frequently had patients recover after the external division of the stricture with as much freedom from dangerous symptoms as when the hernia is returned by the application of the taxis alone. On January 5th, 1844, I operated on a boy for strangulated hernia, the strangulation having existed for two days. I divided the stricture external to the sac, and was able to return the intestine by a very slight exertion of force: not a single bad symptom supervened, and the patient did not seem to suffer more than in reduction by the usual method without operation. I had also a patient in Cornelius ward, on whom I operated for a strangulated inguinal hernia, on which Mr. Key had operated three years before ; in this case I divided the stricture without opening the sac, and to my great satisfaction the contents of the sac were easily reduced; the patient did not present any symptom of having been subjected to an operation, and even the collapse almost invariably attendant on the operation for hernia, was in this case wholly absent ; and I might enumerate several cases equally successful.

To Mr. Key is attributable the introduction of this plan of treatment in cases of recent hernia, as formerly surgeons recommended the division of the stricture external to the sac only in cases of very large hernia, and such as were of long continuance.

[After mentioning the caution requisite in passing the director and hernia-knife through the stricture, so as to avoid wounding the intestine, Mr. Cooper says :]

The liability to wound the intestine during the operation exists equally in every kind of strangulated hernia. In the operation, fresh difficulties may present themselves even after the stricture has been divided—viz., in returning the intestine into the abdomen. The difficulties here may arise from the quantity of intestine protruded, from its distension with flatus, its abnormal thickening, or its adhesion to the hernial sac.

In September, 1837, I operated at Guy's Hospital on a young man who was admitted with strangulated inguinal hernia. No difficulty occurred during the operation until after I had divided the stricture, when I found it totally impossible to return the bowel into the abdomen. I punctured the intestine with a grooved needle, to let off the gas with which it was distended, and the patient was put in bed, the head and lower extremities being raised, and the tumor covered by a light cloth kept constantly wet with warm water. After he had been two hours in bed, he passed a large quantity of flatus per anum and my dresser then succeeded in replacing the intestine. The man died, however, in a few days, of peritonitis, the contents of the bowels not having been evacuated. A post-mortem examination was made, but no cause could be found for the difficulty in returning the hernia: the stricture had been freely divided, and there were no adhesions of the intestine, but it was much thickened, and had become inelastic and of a leathery consistence. Mr. Porter, of Dublin, lately described a case to me, in which, after having opened the sac, and divided the stricture, he failed in every attempt to return the protruded intestine into the abdomen, and his patient died in three days with symptoms of strangulated hernia. On dissection, it was found that the colon and part of the ileum had protruded under Poupart's ligament, and that a portion of the ascending colon had fallen over the entrance of the ileum into the caput coli, so as to completely close the valve, and thus produce the symptoms of strangulated hernia, and prevent the return of the protruded part, as the air and other contents of the sac could not be pressed back through the ilio-colic valve. In August, 1841, one of my colleagues admitted a patient into the hospital who was suffering from a large strangulated scrotal hernia. The hot bath, ice, and taxis, were all tried without success, and, the operation being therefore determined on, the sac was laid open, and the stricture divided, but it was found that even then the intestine could not be returned into the abdomen, in consequence of its being enormously distended with fluid; this was evacuated by a small puncture. The patient died, however, in a very short time. If adhesions be the cause of the difficulty in returning the intestine, they must be divided, whether they are to the omentum or to the sac itself, and I have not found this operation so difficult as we might have been led to expect, as the adhesions are usually of recent formation. They may, however, be so firm and extensive that an attempt to divide them would be unjustifiable. The intestine must, under these circumstances, be left in the sac, and of course remains, in that case, under the form of an irreducible hernia. The prognosis is then very unfavourable.

In the cases I have just described, where, owing to its great distension, the bowel could not be returned, I believe that it is better practice not to puncture it either for the evacuation of air or fluid; but after the stricture is freely divided, the patient should be placed in bed, and the protruded intestine covered with linen dipped in warm fomentations, leaving it to the chance of its spontaneous action, in which case it would be easy to return the protrusion into the abdomen. *Med. Gaz., Sept.* 15, 1848, *p.* 438.

94.—OBSERVATIONS ON FEMORAL HERNIA.—By BRANSBY COOPER, Esq, F. R. S., &c.

[Mr. Cooper makes the following remarks with reference to some of the difficulties met in cases of femoral hernia. He says:]

In the first place, be most cautious in your diagnosis, and however certain you may feel as to the true nature of the tumor, always commence the operation rather with the deliberation of one about to enter upon an exploration, than with the confidence only admissible under circumstances of indisputable certainty.

Although it is easier to distinguish a femoral than it is an inguinal hernia, yet there are abnormal conditions relating to the seat of femoral hernia, which complicate its diagnostic marks. An enlarged gland in the upper part of the thigh concomitant with sickness and obstruction in the bowels, may offer great difficulty as to the mode of proceeding. If, under these circumstances, the symptoms be of recent occurrence, and delay, therefore, admissible, internal remedies may be first had recourse to, and the taxis employed; but should the obstruction have existed for a considerable length of time, and the patient be consequently in danger, an exploring operation should be no further delayed. Supposing an enlarged gland be exposed, it should be removed, and the investigation continued; for it is very probable that, under the described circumstances, a hernial tumor may yet be discovered behind the enlarged gland. Sir Astley Cooper mentions a case, in his published lectures, of a patient being admitted into Guy's Hospital, with a strangulated femoral hernia, to which he had had a poultice applied for three days, under the supposition that it was a bubo. When the operation was performed, the intestine was found in a state of gangrene, and the patient died. Another case is mentioned, in which a surgeon not only poulticed, but also opened a femoral hernia, believing it to be abscess, and the patient died two days after. I witnessed the same mistake in Norwich, several years ago, but in that case the patient survived, and the artificial anus proved only a temporary inconvenience.

Psoas abscess and femoral hernia may co-exist, and should exploration be necessary from the continuation of hernial symptoms after proper remedies have been ineffectually administered, the surgeon is not only justified, but bound to investigate the nature of the swelling by surgical exploration. Varicose veins, or tumors of any kind in this region of the thigh, may lead to the necessity for similar treatment as in the cases alluded to. I must again also caution you, not to confound inguinal with femoral hernia; for, if in either case the one be mistaken for the other, neither the force employed in the manipulation by the taxis, nor the surgical operation for the division of the stricture, will be applicable to either indiscriminately.

In making the first incision, without due caution you might easily wound the saphena major vein; you should therefore always previously ascertain the precise position of that vessel. Immediately under the skin you may meet with some difficulty, in consequence of the presence of enlarged absorbent glands, which may require to be removed to enable you to prosecute the further steps of the operation. The fascia superficialis you will also sometimes find much thickened, at others much attenuated, and you should be prepared for this variation, or you may in some cases hardly recognize the structure when exposed to view, and may go on dividing the fascia into several layers, so as to complicate the operation, and preclude the possibility of knowing how far you have proceeded. The laying open the sheath of the femoral vessels is in all cases a difficult part of the operation, as that tissue is not very easily distinguished, either from the superficial fascia, or from the hernial sac. Usually, however, a large vein will be found between the sheath and the superficial fascia, and some fat between the sheath and the sac (the peritoneum), but where neither the one nor the other be present, great caution is required. The division of the stricture is very embarrassing to a young operator, from the great depth of the constriction, and in passing the director under it, it must be pushed deeply backwards in the thigh, before it is directed upwards under Poupart's ligament. In femoral hernia I have found the division of the stricture external to the sac more frequently effective than in inguinal, but it requires some caution in pushing the contents of the sac into the abdomen, that the sac and contents do not all go up together, ("en block") and thus at once convert an external into an internal hernia—a result which would most probably terminate fatally. I once had this misfortune occur to me, and the post-mortem examination proved the fact—even in the common applisation of the taxis only, it has been known to result. If compelled to open the sac, you will generally find that a considerable quantity of fluid escapes, sometimes before, but more frequently after the stricture has been divided. I have seen so much flow out as to give rise to some apprehension that the intestine had been wounded—an accident more likely to occur in femoral than in any other species of hernia.

Medical Gazette, *Sept.* 29, 1848, *p.* 521.

95.—ON THE USE OF THE TAXIS IN STRANGULATED HERNIA.—By Dr. Jonathan Toogood.

In corroboration of the opinion of Mr. Hunt, that "the taxis carefully and patiently applied will generally succeed in reducing a strangulated hernia," I beg to state that in an extensive general practice of forty years, during thirty-three of which I filled the situation of Senior Surgeon to the Bridgwater Infirmary, I have never had occasion to perform the operation but once, and then in a case of congenital hernia. I believe I have met with the average number of cases, and have frequently been called into consultation with others when the operation was considered necessary. The taxis has been so successful that I have rarely had recourse to bleeding, and never to the tobacco glyster. I have often employed the warm bath advantageously, and particularly in one case which I despaired of reducing, and went home (a distance of three miles), for my instruments, leaving my patient in a warm bath, under the care of my assistant. I was detained by an accident which occurred immediately on my return before my own house, for more than an hour, and when I reached my patient, I found him still in the bath, (full two hours having elapsed since he was placed in it), nearly parboiled, but not very faint, and on removing him, the hernia was returned with very little trouble.

Prov. Med. and Sur. Journal, *October* 18, 1848, *p.* 587.

96.—ON THE OPERATION FOR STRANGULATED HERNIA.—By Bransby Cooper, Esq., F.R.S., &c.

[Mr. Cooper observes, that though it is always advisable to attempt the division of the stricture external to the sac, yet it is not always possible to do so: and there are certain circumstances under which the opening of the sac becomes imperative. He says,]

When after the division of the stricture, the hernia still remains irreducible, it shews that the contents have undergone some change, which tends to maintain them in their abnormal situation. To overcome this obstacle to the reduction of the hernia, the sac must be laid open: this operation requires very great caution, for it not unfrequently happens that there are adhesions between the sac and its contents. When the opening is made, the omentum is generally first seen; but should intestine lie in front, it is judicious to cover it with omentum, so that in passing the finger or director upwards towards the neck of the sac, the intestine is not so much exposed to physical injury. If there be any obstruction to the passage of the finger through the neck of the sac into the cavity of the abdomen it is evident that the stricture has produced a thickening or constriction of the sac itself; this might indeed have gone on to such an extent as to require division by the knife, which in that case should be passed upwards into the abdomen, guarded by the finger or with the director. In this operation there is great danger in the liability to wound the intestine in passing the knife through the constricted part of the sac. To avoid this, I invented a knife, the cutting edge of which is protected by a slide, so that it may be passed with safety through the constricted neck of the sac, and then being exposed by withdrawing the guard, the stricture may be divided without the least danger to the intestine.

When the constriction in the neck of the sac is overcome, it must be ascertained whether the protruded bowel is in a fit condition to be returned into the cavity of the abdomen; if it be of a dark mulberry colour, and does not change its appearance when the constriction is removed, the blood in its vessels must have become coagulated, and death of the part consequently supervened; if this be the case, it will also usually be found that the intestine has lost its natural elasticity, and pits upon pressure. If a bowel were in such a state, it would clearly be unfit to be returned into the abdomen, but at the same time I should hesitate before I laid it open, and should apply warm fomentations or a slight poultice, in the hope that restoration may be effective. Should, however, this hope prove abortive, the bowel must of necessity be opened, and an artificial anus established. In any case in which there existed the slightest hope that the bowel still admitted of restoration, and that the blood in its vessels remained fluid, I should return it to the abdomen, as the restorative process is much more likely to proceed when it is in its natural cavity, than if it remained in the hernial sac: and even should it subsequently sphacelate, adhesive inflammation would be set up from within, and preclude the liability of extravasation of the contents of the intestine into the peritoneal cavity. In returning an intestine under these circumstances, care should be taken that it is merely placed at the mouth of the neck of the sac, so that if extravasation should occur, the effused matter may be at once propelled through that outlet. Should it happen in the division of a stricture that the intestine be wounded, notwithstanding every precaution, the edges of the wound should be taken up by the point of a pair of forceps, and silk ligature passed round the small portion thus taken up; the silk will soon be covered by plastic matter, thrown out from the peritoneal coat, while the inflammatory action produces ulceration through the mucous membrane, and the silk is discharged by the intestinal canal. Sir A. Cooper mentions two or three cases where recovery was complete under this mode of treatment. If, however, the opening into the bowel be of any extent, it would not be safe thus to include the whole of it in a ligature, as by doing so the calibre of the injured intestine would be very much diminished. When the wound is therefore too large to be thus secured by ligature, it should be closed by means of the uninterrupted suture: but I should in that case recommend that the intestine be not returned into the abdomen, but either that it be left in the sac or confined by a stitch to the mouth of the opening, for should any portion of the suture give way before the wound is covered by the action of the adhesive inflammation, extravasation into the abdominal cavity, and consequent death of the patient, would be inevitable.

Some difficulty occasionally occurs in returning the intestine into the abdomen, even after the sac is opened, owing to adhesion having taken place between it and the sac, or between the intestine and omentum, or perhaps both; when this is the case the adhesions must be carefully separated before the bowel can be returned. Returning the intestine and omentum together should always be avoided, as their adhesion to each other may prevent the bowel, even after it is returned, from being capable of performing its natural function. The condition of the omentum is as much a matter for the consideration of the surgeon as that of the intestine itself; for by inflammation, the former, which is naturally a delicate and attenuated membrane, may be converted into a solid mass, totally unfitted to be returned into the abdomen. It then becomes a question whether the portion thus altered should be removed or left in the hernial sac: I am an advocate for leaving it in the sac, for if it be removed by incision it will be necessary to apply a ligature to stop the bleeding from the divided vessels, and that process is very liable to produce peritoneal inflammation; a further advantage is also derived from leaving the omentum in the sac, as it some-

times becomes adherent to the aperture through which it had passed, and thus prevents the future descent either of omentum or intestine. Should the omentum have become sphacelated, the dead part may be removed with safety, provided due care be taken to avoid the division of the vessels of the neighbouring living portion. It sometimes happens that when living omentum has been left in a hernial sac, it will afterwards pass into a state of sphacelus, even although the external ring may have entirely united. This change is marked by a train of symptoms that clearly indicate the alteration which is taking place in the omentum; for notwithstanding that the bowels continue to perform their natural office, the constitutional powers of the patient become suddenly depressed, the pulse feeble and irregular, often attended by hiccup; and the wound, which had healed, again opens, and a fœtid odour is emitted from its surface: poultices should be immediately applied to the part, the sloughing omentum removed, and chloride of lime, or a weak solution of chloride of zinc, employed to destroy the fœtor and assist in the separation of the dead part. Tonics must also be administered, and if there be any tendency to sickness, carbonate of ammonia, in a state of effervescence, and combined with some narcotic, may be given.
Medical Gazette, *Oct.* 13, 1848, *p.* 604.

97.—ON THE OPERATION FOR INTERNAL STRANGULATION, OR OBSTRUCTION OF THE BOWELS.—By Bransby Cooper, Esq., F. R. S., &c.

[The question of what are the circumstances which justify us in laying open the abdominal cavity either for a hernia reduced, *en masse*, or for internal strangulation or obstruction, is still, Mr. Cooper observes, *sub-judice*. It is quite certain, he says, that the operation should only be performed as a last resource: for though the delay diminishes the chance of success, yet we find that many cases, apparently reduced to the last extremity, have recovered under nature's own reparative efforts. As to the mode of operating, Mr. Cooper remarks.]

When abdominal exploration is determined on, I believe that the linea albi ought to be the point chosen for the performance of the operation; for, although the locality of the symptoms may lead the surgeon to guess at the precise point at which the obstruction is situated, still, as you avoid the necessity for the division of muscular fibre, and the liability to hemorrhage, as well as deriving the advantage to be obtained from the accurate knowledge of the relative position of the subjacent parts, acquired by commencing the operation from one precise point, this region is the most appropriate for the operation.

When obstructions occur to the large intestines, as from stricture in the rectum, or in the sigmoid flexure of the colon, the operation necessary for the relief of the patient is the formation of an artificial anus. This is to be effected by opening the colon in the posterior lumbar region, deviating in this case from the practice recommended in the exploration, where the point of obstruction is doubtful. The well-marked symptoms and history of the case, will, however, preclude any difficulty in forming a just diagnosis. *Medical Gazette*, *Oct.* 13, 1848, *p.* 606.

98.—OPERATION FOR HERNIA ACCORDING TO MR. GAY'S METHOD.—By Dr. A. Catherwood, Hoxton.

[This was a case of femoral hernia in a female. After the strangulation had existed somewhat less than twenty-four hours, the use of the taxis, aided by the application of ice to the tumour, and a purgative enema, having been ineffectual, Dr. Catherwood operated. He says,] I began the operation, after chloroform had been exhibited, by making an incision, about an inch in length, between the tumour and the spine of the pubis, obliquely, from above downwards, and from without, inwards, the highest point of the incision being over the inner part of the fermoral ring. After completely dividing the superficial fascia, the tip of the finger was readily passed to the angle between Gimbernat's ligament, and the neck of the hernial tumour, and a section of the edge of the ligament made with a concealed bistoury. A few fibres were now found to hold the tumour, which were divided by bringing the edge of the bistoury directly forwards. By making a very gentle pressure on the sound skin, the rupture immediately returned. The whole operation occupied but a very short space of time. Within ten minutes the bowels were moved, and their action continued at short intervals during the night.

Observations.—This mode of operating possesses such great advantages over the commonly adopted method, that it only requires to be thoroughly known and understood, to receive the sanction of the profession.

1. The external incision is only just large enough to admit easily the forefinger.
2. Healthy structures are alone interfered with.
3. The wound heals by the first intention.
4. A truss may be worn three days after the operation.
5. The pain is inconsiderable, and the danger most materially lessened.

Lancet, Aug. 26, 1848, *p.* 235.

99.—NEW INSTRUMENT FOR THE CURE OF EXOMPHALOS.—By W. N. SPONG, Esq.

Well regulated, constant, and equable pressure, seems all-sufficient for the cure of this disease in infants, and the elastic belt, presently to be described, answers the purpose effectually. It consists of a piece of vulcanized caoutchouc, about six inches in length, and three inches and a half in breadth, to either end of which is attached a piece of fine, white linen web, a species of girthing used by saddlers, and manufactured of about the same breadth,) with tapes appended, which are tied behind the back. The piece of vulcanized india-rubber should be of such a length, according to the size of the child, as will embrace rather less than one-third of the circumference of the abdomen, the circle being completed by the pieces of linen web; this material is sufficiently stiff to prevent its creasing.

Vulcanized caoutchouc is admirably adapted for many surgical purposes; it possesses valuable elastic properties, and every day some new application is found for it in the arts. Its elasticity admits of the various movements of the child, of its crying, coughing, &c.; and in whatever position the body is placed, it ever keeps up a determinate pressure. The patient soon becomes accustomed to its use, and it may be worn advantageously by night as well as by day; moreover, it retains its position accurately.

This substance is made of various degrees of thickness; that which is about as thick as a half-crown will be found to answer best. Another small circular piece, twice as stout as this, and about two inches in diameter, should be fixed to the centre of the first by a stitch of strong silk passed through the centre of both; this acts well as a pad immediately over the hernia. The cure of this malposition of parts is speedily effected by nature, and the ring becomes accurately closed, provided the hernia is well maintained. Any requisite degree of pressure can be attained by means of this belt, on approximating the tapes, three or four in number, on each side. On one side they should not be attached close to the end, in order to allow of overlapping when the caoutchouc is put upon the stretch.

This instrument will be found both simple and efficient, and it costs but a fewpence—a point of some consideration in the treatment of the poor. I have tried its use in several cases, and with uniform success. The cure usually occupied a period of from three to four months; but in one case, where, from neglect of the mother, the hernia had attained the size of the child's fist, the use of the belt was required for six months. The same belt, made of stouter material, will be found to answer for reducible umbilical hernia of adults, as the instrument is not displaced by exercise, and the patient can employ whatever amount of pressure he finds best for his particular employment. *Lancet, June 3, 1848, p. 606.*

100.—NEW TRUSS FOR OBLIQUE INGUINAL HERNIA.—By G. R. DARTNELL, Esq., Staff-surgeon, Fort Pitt.

[Mr. Dartnell thus describes what he terms the "solid pad truss:"]

It consists of a short and pliant steel spring, which is terminated at either end by a pad. The anterior or rupture pad is of small size, formed of hard wood, polished, and of a rounded oval and somewhat conical shape. The back pad is flat, formed of strong leather, padded on the inner face, and furnished with two bridles on the outer one for connexion with the spring. The spring itself is cased with leather, and has a downward curve at its anterior extremity, which brings the wooden pad attached to it directly on the inguinal canal and internal ring. The instrument, when applied, is retained in its place by a light strap, continuous with the sheath of the spring, which, being passed round the opposite hip, loops on a button screw on the front pad.

The polished wooden pad requires no renewal, does not absorb the perspiration, or heat and excoriate the skin; it may, if preferred, be covered with a cap of chamois leather,* and as it imbeds itself in the soft parts above the pubic bone, and completely closes the walls of the inguinal canal, it causes no inconvenience to the wearer, effectually prevents protrusion of the bowels, and cannot in any way injure the spermatic cord.

The leather pad (which can readily be adjusted to the centre by sliding it either way on the spring) lies flat and close to the back, and obviates the necessity for a continuation of the steel spring round the opposite side of the body—a desideratum in all cases, more especially in that of the ruptured soldier, whose truss is so apt to be broken in the centre by the striking of the ammunition pouch.

Lay the patient on his back, and place the truss on the affected side; return the bowel, and feel for the internal ring, or upper opening through which the intestine protrudes; (you will find that the point of the finger pressed firmly on this spot will effectually prevent any protrusion:) on this point lay the wooden pad, taking care that it does not press on the pubic bone. Place the leather pad on the lower part of the hollow of the back, pass the strap round the opposite hip, and loop it on the button screw in front. No under strap is required.

Care must be taken to select an instrument that is of the proper size and shape, that fits everywhere closely and accurately, and that is not stronger in the spring than is absolutely required.

Lancet, Oct. 7, 1848, p. 403.

101.—NEW TRUSS FOR INFANTS.—By W. COATES, Esq.

[The difficulties which attend the application of a truss in young children are well known: and any contrivance by which these difficulties might be avoided, has long been a desideratum. Mr. Coates tells us,]

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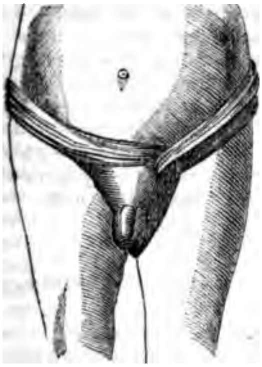
* Flannel I now find preferable; it washes clean, and never hardens or cracks, as the leather does.



The subjoined sketch represents a truss employed by a gudewife in my neighborhood; and its excellence is such that it is a duty to make it generally known. Horace tells us not to despise the teaching of the unlearned, for—

> "Interdum vulgus rectum videt."—*Epist.*

I have given this truss extensive trials: the result has uniformly been the radical cure of the disease. It consists, simply, of a skein of lamb's wool; for infants, *Berlin wool* is preferable; this encircles the pelvis, one end is passed through the other at a point corresponding with the inguinal ring; the free end is carried between the thighs, and is fastened behind to that portion which forms the cincture.

This simple and cheap contrivance can be worn during the morning and evening ablutions, and then changed for a dry one; no attention is required on the part of the nurse, except at the moment of changing. With ordinary care in drying the skin, and the occasional application of magnesia or other nursery powders, I have never found the skin galled.

In cases of emergency this truss may be made available for adults; or rather, the modification of two silk handkerchiefs tied in a ring, which, as a *pis-aller*, is no more to be despised than is a garter and stick as a temporary tourniquet. *Medical Gazette, Sept.* 29, 1848, *p.* 535.

102.—ON THE TREATMENT OF HEMORRHOIDAL TUMOURS.—By H. LEE, Esq., Assistant Surgeon to King's College Hospital.

[After mentioning the varieties of hemorrhoidal tumours described by pathologists, Mr. Lee observes that in the majority of cases, whatever be the primary form of the disease, it is greatly affected by alterations which take place during its progress. He says:]

The first effect of an internal hemorrhoidal tumour is to raise the mucous membrane, to separate it from the muscular coat, and to cause it to protrude into and encroach upon the cavity of the rectum: the lower aperture of the bowels is thus narrowed, and increased efforts are required in order to evacuate its contents. The straining which accompanies these efforts forces the tumour and the mucous membrane which covers it below their usual situation, but as they soon recover their position, no further inconvenience is perhaps at the time experienced. At length, however, some slight attack of inflammation occurs in the part; the hemorrhoidal tumour is increased in size by the deposition of lymph and serum, and renewed efforts are made which force it farther down, and at length expel it from the extremity of the bowel.

The peculiar disposition of the muscles situated at the lower aperture of the rectum, now exercises a marked and very important influence upon the progress of the disease. The extremity of the bowel is surrounded not only by the muscular fibres which constitute its proper sphincter, but also by the posterior and superior portion of the *levator ani:* this portion of the muscle consists of a broad band of fibres, which embrace the sides and the back part of the rectum, and sling it forward towards the pubis. The last inch and a half or two inches of the bowels are thus surrounded by muscular fibres capable of exerting very considerable pressure upon any body placed within their grasp. When, therefore, any tumour in the bowel is forced below its natural level, and becomes encircled by the fibres above mentioned, it is placed in circumstances very similar to those of a knuckle of intestine in a hernial sac. This degree of compression may vary from that which is attended with only a slight, dull, heavy aching pain of short duration, to that which produces real strangulation, preceded by the most acute suffering.

In the great majority of cases, the circular fibres, above mentioned, exert a comparatively slight degree of compression, but still sufficient to produce an important effect upon a tumour placed within their grasp. A very slight degree of pressure is sufficient to retard the free return of blood from the part. This is necessarily followed by congestion and swelling of the tumour, and places it under those conditions which of all others render it most liable to repeated attacks of inflammation. The tumour, which was originally of a red colour, now assumes a dark purple appearance, and the mucous membrane in the neighbourhood being drawn upon whenever the pile is forced below its natural level, at length assumes a permanent disposition to "bag," and portions of it are continually being forced through the lower aperture of the bowel. These changes are generally accompanied by an occasional dull, heavy aching pain, either in the perineum or in the rectum; but usually it is not till repeated attacks have been experienced, that the pain and inconvenience are sufficient to induce the patient to seek for surgical relief.

[Of the two cases which Mr. Lee relates, we give the following :]

S. S. W., Esq., about 70 years of age, had been troubled with the usual symptoms of piles for many years. In the summer of the year 1844 the inconvenience had greatly increased, and it became, to use his own words, "absolutely necessary that something should be done." His general health was evidently upon the decline, and his legs were swollen and œdematous. On examination I found the margin of the anus surrounded by soft livid tumours, together with a considerable portion of prolapsed mucous membrane, which he was unable to return into the bowel. The projection altogether was the size of half a large orange. Considering the state of health of this patient, I was unwilling to perform the common operation, and I ultimately determined to destroy a portion of the relaxed mucous membrane upon each side of the bowel, with the strong nitric acid. This was easily accomplished, with the precautions hereafter mentioned; and I had the satisfaction to find that the operation was attended with scarcely any pain.

For some time after this operation the hemorrhoids descended every time that the patient had a motion; and at first little good appeared to have resulted from the application. The small sores left after the separation of the sloughs, soon however began to heal; and as their edges were drawn together by the process of cicatrization, the parts descended less frequently, and in three weeks from the time of the operation I had the satisfaction to find that the whole of the parts were habitually retained within the sphincter. The distressing symptoms from which this gentleman had so long suffered were now entirely relieved; and although I saw him occasionally for many months afterwards, I never heard that he experienced any return of his former complaint.

It is important to remark that the benefit to be derived from such an operation must not be expected till the small ulcers made by the caustic begin to heal. The loose folds of mucous membrane are then drawn upon, and the whole of the mucous lining is rendered more tense. Each small cicatrix, moreover, serves as a permanent point of attachment for the relaxed membrane, and consequently the inner coat (which alone descends in such cases) is retained permanently in contact with the other coats of the bowel.

The degree of pain experienced in this operation depends in great measure upon the way in which the nitric acid is applied: the sensibility of the thin skin around the anus is very great, and if the acid is allowed to come in contact with it, the degree of tingling pain experienced is very considerable; if care be taken, on the other hand, to confine the application of the acid to the comparatively insensible mucous membrane, a slight uneasy sensation in the lower part of the abdomen is generally all that is complained of.

In the application of nitric acid to hemorrhoidal tumours, the degree of irritation experienced will often depend upon the extent of surface involved in the operation. When, therefore, a considerable amount of the mucous membrane descends with the tumours, it is desirable to select certain portions of it. to which the application of the acid should be confined. The effect of the acid may be regulated either by applying very small quantities of it at a time, or by shielding the surrounding surface by a paste made of chalk and water.

Every portion of mucous membrane to which the acid extends should be as completely deprived of vitality as possible, since the degree of pain experienced will necessarily depend upon the remaining sensibility in the parts. Unless these conditions are observed, the application of nitric acid, or any other caustic, to the mucous membrane of the rectum, may prove as serious an operation as that for which it is intended as a substitute.

Wm. Perry, æt. 33, was admitted into St. George's Hospital on the 1st of September, 1847. He had suffered much from the usual symptoms of piles for twelve years; and his health had become seriously impaired by repeated and copious loss of blood from the rectum. When he strained at stool, a cluster of piles presented themselves, which, together with a considerable portion of mucous membrane, formed a mass the size of half an orange. A fortnight after his admission (the bowels having been previously opened by some mild laxative medicine) the strong nitric acid was applied to the tumours, and allowed to extend over nearly the whole of the protruded parts. He experienced considerable pain at the time of the operation; and a few hours afterwards had a slight rigor. The night following he was kept awake by pain in the rectum, which he also experienced during the next day. On the third day his symptoms were relieved; but he still found that the tumours descended every time that he went to the water-closet, and caused him considerable inconvenience till they were returned to their natural situation.

On the 2d of October the application of nitric acid was repeated more carefully. On the 19th of the same month, his symptoms had entirely disappeared. There was now no descent of the bowel; he felt entirely free from pain; and the hemorrhage from the bowels had ceased. This patient was again seen on the 22d of February, 1848. He then stated that, from the time of leaving the hospital, he had continued well and free from pain, but that a few days previously he had again experienced a slight discharge of blood from the bowel.

I can have no hesitation in attributing the pain and irritation experienced in this case, after the application of the nitric acid, to the conditions above mentioned not having been regarded. Having witnessed this operation, now, in a considerable number of cases, I have never known similar inconveniences to arise when the acid has been confined to a small portion only of the mucous membrane, and applied so as completely to destroy its sensibility. The following case will show what a comparatively trifling operation this may become under favourable circumstances:—

Captain H. was seen on the 6th of March, 1847. He had suffered from piles for several years, and had at different periods lost a large quantity of blood. Upon examination, finding two large internal hemorrhoids, I applied the strong nitric acid, so as to completely destroy the mucous membrane covering them, taking care that the acid extended to no other part. This gentleman experienced only a slight uncomfortable feeling in the lower part of his abdomen during the operation, and this almost immediately subsided. I requested that he would lie upon the sofa for the remainder of the afternoon, but calling upon him again in the course of a few hours, I was surprised to find that he had gone out for his accustomed walk. The operation in no way interfered with the pursuit of his usual occupations.

The nitric acid in such cases should be the *strongest that can be procured:* that which is usually kept by chemists under the name of the strong nitric acid does not effectually destroy the surface to which it is applied; and when used it therefore produces more pain than the strongest, and cannot be so certainly relied upon to accomplish the intended purpose.

The most convenient way, perhaps, of applying nitric acid to hemorrhoidal tumours, so as to insure the success of the operation, is to encircle the base of the tumours to be removed with any instrument which will at the same time hold them in their situation and make sufficient pressure to prevent the divided vessels from bleeding; any portions of hemorrhoidal tumours, or of the mucous membrane, may then be removed with a pair of curved scissors, and the cut surfaces immediately wiped dry and touched with the acid. If this is done before any bleeding has taken place the blood in the vessels will be coagulated, and the vessels permanently sealed. Care must be taken, however, in performing this operation that the pressure completely commands the hemorrhage, for if any blood escapes from the surface it will become mixed with the acid, and prevent it from effectually acting upon the surface to which it is applied. The instrument which is best adapted for restraining the hemorrhage under these circumstances consists of two parallel curved plates of steel, with their internal edges slightly indented, so as to fit each other when they are brought together; these two plates are connected at each end by a small cross bar, to which a screw is adapted so as to produce the exact degree of pressure required. When the tumour to be removed projects sufficiently, a common india-rubber ring applied round its base will frequently answer every purpose.*

There is a considerable class of cases which generally pass under the common name of "piles," but which differ in their mode of origin from those which have been before considered. In the cases to which I now allude the inconvenience experienced does not, in the first instance, arise from the existence of hemorrhoidal tumors, nor from any inflammatory affection of the parts, but from portions of the relaxed mucous membrane becoming inverted and griped by the muscular fibres situated at the lower part of the rectum. The following case is mentioned by Mr. Abernethy :—

A medical man having dined out was seized with some disturbance in his bowels, which caused him to get up during the night. He returned to bed, but could not rest. He experienced great pain and irritation about the pelvis, and was unable to attend to his practice the next day. When Mr. Abernethy saw him he had no less than thirty or forty scarifications upon his nates, from cupping-glasses which had been applied in the hope of procuring some relief. Mr. Abernethy, suspecting that a small plait of bowel had descended, and was griped by the sphincter muscle of the bowel, examined the parts, and found a small protrusion: this he returned to its natural position, and immediately relieved the patient.

The insensibility of the mucous membrane in this complaint frequently causes the symptoms to be referred to the neighbouring parts, and therefore it is, I believe, that this disease often exists without being recognized. A patient will often complain of a dull pain over the sacrum, or a heaving aching pain in the perineum, which neither he nor his surgeon can satisfactorily account for. In the course of time some other symptom presents itself, which draws attention to the rectum, and the usual remedies for piles are administered: laxatives, mercury in different forms, and sometimes local depletion, are had recourse to, without, of course, any ultimate benefit as long as the disease depends upon a mechanical cause.

Permanent relief in such cases can only be sought by means of such remedies as tend to brace the mucous membrane of the bowel. The simplest as well as the most efficacious method of accomplishing this is to remove one or two small longitudinal folds of the mucous membrane ;—when any portion of the lining of the bowel can be forced down this may be easily accomplished, in the same way as recommended for the removal of hemorrhoidal tumors. It is not necessary to remove the precise portion of membrane which has become inverted; the destruction of any portion will, after the wound is healed, have the effect of bracing the remainder. In this, as in the operation for hemorrhoidal tumors, it is the process of cicatrization which cures the disease.

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* If an India-rubber ring is used it should be cut off (not pulled off over the tumor) when the operation is concluded.

When an operation cannot be had recourse to, other means may be tried in order to give tone to the bowel: among the first of these may be mentioned frequent ablution with cold water. Different kinds of ointment may also be used for the same purpose. The following I have known attended with considerable benefit:—℞. Pulv. hydr. nitr. oxyd. ʒiij.; pulv. capsici, gr. v.; ung. cetacei, ℥j. M.

But in cases where the mucous membrane of the rectum has acquired an habitual disposition to "bag," it frequently happens that no local application will afford permanent relief. The loose folds of membrane (which may or may not be connected with hemorrhoidal tumors) will descend again and again, and sometimes keep up irritation in the part for several years. An effectual remedy may sometimes be found under such circumstances by affording local support to the relaxed membrane. The disease being of a mechanical nature may be relieved by mechanical means. A variety of instruments have at different times been invented in order to accomplish this object. Those of the simplest construction have consisted of a stem three-quarters of an inch in length, with a cross bar at one extremity to prevent the instrument from passing into the rectum, and a bulb at the opposite end to retain it in its position when introduced. In the advanced periods of the disease, where the muscular rings at the lower part of the bowel have become inverted from above downwards, and some of them protruded together with the relaxed membrane, the instruments above mentioned have occasionally been of essential service. But in the earlier stages of this complaint they have frequently been attended with more irritation than the disease which they were intended to alleviate.

Med. Gaz., Aug. 11 *and Sept.* 1, 1848, *pp.* 241 *and* 381.

103.—ON HÆMORRHOIDS.—By Bransby Cooper, Esq.

These painful tumors must be looked upon as resulting from a varicose condition of the veins of the rectum; a state generally produced by some obstruction in the portal system.

The superior hemorrhoidal vein returns its blood to the vena portæ, which, if it become obstructed from disease of the liver, would necessarily tend to congestion of the veins of the rectum; and this anatomical fact teaches us, that in piles, the remedies may often be advantageously directed to the relief of the loaded liver. High living, want of exercise, or constipated bowels, frequently, therefore, induce congestion of the veins of the rectum, and their consequent varicose condition. If this congestion become permanent, the blood within the veins coagulates, and, acting as extraneous matter, excites inflammation in the surrounding submucous cellular tissue: adhesive matter is then thrown out, and unites the congeries of varicose veins into a solid mass, which constitutes a pile. It sometimes happens that some of the veins included in the adherent mass still contain fluid blood, and therefore slight hemorrhage occasionally occurs. From these bleedings, the patient frequently derives so much relief as to be led to believe that the attack of piles has subsided; such relief is, however, generally but of short duration, as the vessels soon fill again, and produce a return of all the symptoms.

Hemorrhoids, moreover, necessarily produce great obstruction to the passage of the egesta, and the piles are often forced down by the efforts of the patient during evacuation, so that they protrude through the anus, often attended by considerable prolapsus; generally, however, upon the completion of the act of defæcation, both the hemorrhoids and the prolapsed bowel spontaneously return into the anus. Sometimes the piles become so much elongated by frequent protrusion as to be rendered permanently external; when, from exposure to constant friction and other sources of irritation, their mucous membrane soon becomes converted into true skin. It would be supposed that in this condition the hemorrhoids would produce much less irritation, but such is not the case: for as they still remain connected with the interior of the rectum, they continue to excite considerable disturbance, and sometimes, becoming themselves inflamed, require leeches, and strict dietetic observance, for their relief, it being also necessary that the patient should be kept in the recumbent position External piles do not, however, always appear as the mere result of the protrusion of internal piles, but are sometimes entirely independent of them, and arise from inflammation and thickening of the subcutaneous cellular tissue around the anus; these piles are apparently unconnected with a dilated condition of the veins, although originally the congestion of the latter may have produced the inflammation.

External piles even when unattended by internal, frequently produce prolapsus ani, extreme pain in the course of the sciatic nerve, pain in the perineum, and in some instances even difficulty in passing the urine; nor are these phenomena inexplicable to the anatomist and pathologist, when it is remembered that these parts are supplied by filaments of nerves derived from the same source. The excision of piles forms, however, an almost infallible means of removing all these symptoms. A short time since, I was consulted by a patient in the Edgeware Road, who was the subject of both internal and external piles: his medical attendant had tied several of the internal ones without affording any permanent relief; but when I removed the external hemorrhoids the patient was rapidly cured. In another case, I was called to a lady, a governess in the family of a nobleman: part of her duties consisted in walking out with her pupils, but this exertion caused her so much pain that she was obliged to confide her condition to the elder of the ladies, and whenever they went out to walk she was in the habit of going to lie down at the house of a friend close by: this could not go on long, and she was obliged to seek medical aid. She told me a pitiable tale of her suffering: the piles were external, and were attended by frequent bleedings, but after I excised them, she very rapidly recovered. I remember also the case of a gentleman, who was very fond of hunting but who was afflicted by piles to such a degree that his saddle was often covered with blood; at length the disease became so bad that he was obliged to give up his favorite amusement. I then saw him, and after having excised the piles, treated him with enemata and laxatives; principally, however, insisting upon the necessity for always passing his motions at night. He very soon recovered, and it is now eight years since he had any symptom of a return of his complaint.

Whether the piles be internal or external, they necessarily cause great inconvenience in the act of defæcation, and the fæces are generally passed in small portions, and are often atttended by a flow of blood; these symptoms are not, however, referrible to piles alone, as they may equally proceed from stricture of the rectum. It may, however, easily be ascertained by an examination per anum, whether the symptoms are produced by piles or stricture. The first treatment of piles should always bear reference to the state of the patient's general health; for, as they usually depend upon some disturbance to the function of the liver and bowels, or both, until the healthy action of these organs be re-established there can be but little hope of removing the local disease. Small doses of mercury to act on the liver, and mild purgatives to excite a healthy action of the bowels, constitute the means to be employed; but the purgatives should be of the least drastic nature, and not likely to act especially upon the lower bowels. The nostrum termed "Ward's Paste," or the confec. piper. nigr. of the London Pharmacopœia will be found useful; but if they should produce nausea, as they frequently do, I have found the following prescriptions of very great benefit in restoring the natural action of the bowels:—℞. Aloes decoc. co. ʒiss.; sarsæ ext. ʒss.; sarsæ decoc. co. ℥iss. M.—Ft. haustus ter quotidie sumendus; giving also an alternative pill two hours before dinner to induce evacuation of the bowels at bed-time. If the irritation still remains so as to create an uncontrollable action of the bowels, considerable benefit will be derived from the use of the following pill:—℞. Morph. acet. gr. 1-6th; hyos. ext. gr. iss.; camphoræ, gr. ij.; colocynth ext. co., gr. ij. M.—Ft. pil. bis terve quotidie sumenda.

[When surgical treatment is required, its nature will vary, of course, according to the kind of pile.]

Internal piles, Mr. Cooper observes, which are only covered by mucous membrane, should always be removed by ligature, in consequence of their great tendency to bleed; and, indeed, I have known more than one instance of death from excision in such cases. There is, however, sometimes a degree of difficulty in exposing the pile sufficiently to enable you to apply the ligature; but this may generally be effected by causing the patient to sit over a hand-basin filled with hot water, and placed upon the floor, so that he is obliged to stoop or crouch over it. By some straining the pile will now generally protrude, and the ligature can be passed around it; the mucous membrane and submucous cellular tissue must alone be included, and then the operation is attended with but little pain. If the base or root of the pile be very broad, the ligature may be applied by another method. A needle, armed with a double silk, should be passed through the centre of the tumor and the threads being separated are tied on opposite sides, each including one half of the pile. The latter should then be laid open by the knife. which affords great relief to the constriction, and is wholly without danger, as the ligatures preclude hemorrhage.

After the operation, the patient should be kept in the recumbent posture, upon low diet, and a dose of opium be administered, to keep up a constipated state of the bowels, until the ligature has sloughed away. An external pile is better removed at once by excision; and in performing this operation, the pile should be taken off by one sweep of the knife; if there be more than one pile to be excised, it is best to remove them all at the same "sitting," as in that case the patient suffers less constitutional irritation than when each pile is made the subject of a separate operation. In thus removing piles, there is, however, one point that ought not to be lost sight of; the process of cicatrization will necessarily contract the verge of the anus; and, unless some mechanical means be employed to obviate this, there would arise permanent difficulty in expelling the fæces. Bougies should therefore be daily passed during the progress of the healing process, to prevent such contractions.

Should you have to perform this operation, you must not be disappointed if, for the first three or four days, the patient seems to have received but little relief; and, indeed, a fresh growth of piles sometimes appears to be formed; these generally prove, however, to be nothing more than folds of mucous membrane, which pass down probably in consequeuce of some of the fibres of the sphincter ani muscles having been divided. Such protrusions generally subside by the application of cold poultices; and the re-union of the sphincter muscle prevents their return.

Medical Gazette, *Oct.* 27, 1848, *p.* 692.

104.—ON PROLAPSUS ANI.—By Bransby Cooper, Esq., F.R.S. &c.

[In mild cases the improvement of the general health by tonics, and attention to diet and regimen, together with the use of mild aperients, and astringent injections into the rectum, will afford relief. But, Mr. Cooper observes,]

In very protracted cases of prolapsus, palliative means may not prove sufficient, and mechanical contrivances may be requisite to return the protruded membrane within the anus; bougies or the finger may be employed for this purpose; but in some instances the tone of the sphincter may be so completely destroyed that it would be incapable of retaining the intestine even after it is returned; a pessary should in that case be passed into the rectum, and allowed to remain there for a few hours, so as to maintain the loose portion of membrane sufficiently long in situ to allow of its recovery from the congestion arising from its protrusion and exposure to external agency. I have seen an instrument which is worn by the Chinese, who are very liable to prolapsus ani, for the purpose of retaining the bowel within the anus. It consisted of a ball of silver, perforated with holes, to permit of the escape of flatus, and made to unscrew in the middle, so that it could be easily cleaned; this instrument appeared to me to be admirably suited to the purpose for which it was intended. When a pessary is employed, it should be passed into the bowel above the sphincter muscle, otherwise it would prove a source of increased irritation rather than of relief. And at the same time that mechanical contrivances are made use of, constitutional means should also be adopted for the purpose of improving the tone of the health. In spite, however, of all these means, the prolapsus may remain unrelieved, in which case a surgical operation must be undertaken, in the hope of effecting "a radical cure." This object may sometimes be attained by pinching up with a pair of forceps a small portion of the mucous membrane of the bowel, and securing it with a ligature, taking care not to include anything besides the mucous membrane. In this manner two or three portions may be taken up just above the sphincter at about equal distances from each other, and each being tied, the resulting cicatrizations will produce a very uniform contraction, so as to prevent the future protrusion. I have also in two or three obstinate cases divided the anal extremity of the sphincter muscle, for the purpose of permanently diminishing the size of the opening of the anus; the after treatment consists in keeping the patient in the recumbent posture, and maintaining for a few days a constipated state of the bowels, to enable the parts to recover from the effect of the operation.

Medical Gazette, Oct. 27, 1848, p. 691.

105.—TREATMENT OF FISSURE OF THE ANUS.—By M. Maisonneuve.

The author, believing this affection to depend on spasm of the sphincter ani, has adopted the following operation (first proposed by M. Recamier), in order to destroy the spasm by forcible distention. Introducing two fingers into the rectum, the anus is stretched by drawing the fingers in opposite directions, and the operator is thus enabled to introduce his whole hand into the rectum; he then closes his hand, and draws his fist through the anus. Among a great number of cases the author has not witnessed any bad effects, or a single relapse.

For the complete destruction of the tendency to spasm, the hand must be retained in the rectum for a considerable time; in such cases permanent relaxation of the sphincter is a bad effect to be apprehended from the operation.
—*Monthly Journal.* *Dublin Medical Press, July* 19, 1848, *p.* 330.

106.—ON STRICTURE OF THE RECTUM.—By Bransby Cooper, Esq., F.R.S., &c

[The rectum is sometimes, Mr. Cooper observes, the seat of spasmodic stricture, resembling the stricture of the œsophagus which occurs in hysterical females. But permanent stricture is a frequent occurrence, and one of the prominent symptoms of this state is constipation, partly due to the obstruction, and partly occasioned by the avoidance of defæcation by the patient, who dreads the acute pains which it occasions.]

The egesta, Mr. Cooper observes, in stricture of the rectum are passed in small rounded portions, or if "figured," of very small diameter, from being forced through the contracted part; the patient usually complains of distension of the abdomen, interference with the function of respiration, and loss of appetite. With these symptoms an examination should be made per anum, at first with the finger alone, and this will probably lead to the detection of the obstruction, which is often very firm, and resists the entrance of the finger into the bowel. This excessive hardness may be produced either by scirrhus, or by a mere attack of inflammation, and therefore, the hardness alone is not to determine the judgment of the surgeon as to the disease being malignant, as that question will be best decided by the age of the patient, the length of time the disease has existed, and by the nature of the pain. If, for instance, the patient be old, the pain constant, severe, and of a lancinating character, and he has great dread of exciting the muscular action necessary to the evacuation of the bowels, and if at the same time there is an appearance of what is termed malignant diathesis, the prognosis would be unfavourable. But, if the obstruction results from simple inflammation in a youthful patient, it will be indicated by the suddenness of its appearance, by the febrile symptoms attendant upon it, and by the peculiar sensation conveyed to the finger; for although there is considerable hardness, it is not of the stony character that marks scirrhus, but gives the idea of its being a dense projection of the natural structures into the bowel, rather than an adventitious deposit. When the disease is malignant, bleeding is frequent, particularly upon examination either by the finger or instrument, and the pain lasts for a considerable time after, which is not the case with common stricture. The treatment in the non-malignant disease consists in the occasional application of leeches around the anus, the patient being kept in the recumbent posture, and I believe that enemata will be generally found better than bougies, as a mechanical means of overcoming the obstruction, unless they act, indeed, too much upon the bowels, in which case bougies must of course be employed.

The introduction of the bougie is a matter requiring considerable skill and anatomical knowledge; and in this particular case also, a competent acquaintance with the change of the relative situation of the rectum consequent upon the position in which the patient is placed. From want of this knowledge, indeed, unskilful practitioners often do great mischief, sometimes wounding the rectum, from which accident extravasation of fæces, peritonitis, and death, may be produced. The bougie should, therefore, only be employed by scientific surgeons. Leeches, the recumbent posture, injections, and in some cases the use of the bougie, and cupping in the loins when the pain is severe, are the means to be had recourse to in non-malignant obstruction. And often, by such measures, a disease which at first appeared to be of an alarming character, is quickly removed. In malignant disease but little can be done: the adventitious matter indefinitely increases, so as at length completely to obliterate the bowel, and the patient dies from the insuperable barrier opposed to the escape of the excretions, unless an artificial anus be made in the colon, or as some surgeons have recommended, a cutting gorget, or some instrument of the kind be forced through the obstruction; but this if it afford any relief, can only do so temporarily. Scirrhus stricture generally destroys the patient, however, by the propagation of the malignant disease through the medium of the absorbents to some distant part: thus, perhaps, transplanting it to important vital organs, in which case the reaction on the constitutional powers is very rapid, and the patient soon sinks beneath its influence. *Med. Gaz., Nov.* 10, 1848, *p.* 782.

107.—OPERATION FOR FISTULA IN ANO.—By Bransby Cooper, Esq., F.R.S., &c.

The effectiveness of this operation depends entirely upon the complete division of the sphincter ani muscle, for by its contractions it offers resistance to the free passage of the contents of the bowel, which thus have a tendency to pass through the abnormal opening, and keep up its fistulous character. If a probe be introduced into the opening through the skin, it can generally be pushed two or three inches upwards by the side of the rectum, and if, at the same time, the finger be placed in the bowel, the point of the probe can be readily felt through the parietes. I believe, however, that no communication is ever formed between the bowel and the fistula so far above the sphincter; no advantage is therefore derived from this extensive exploration, and it is, in my opinion, very bad practice to make an incision in the bowel so high up, for if a very extensive wound is unnecessarily made, large vessels are exposed to danger, and nature is called upon to repair a much greater lesion than is really requisite. The operation should consist in merely introducing the probe into the external opening, and in seeking, by gentle manipulation, for the ulceration into the bowel itself: this will usually be found immediately above the upper edge of the sphincter muscle, but if there should be any difficulty in discovering it, the probe-pointed bistoury may be gently forced through the parietes of the rectum, and the point of the knife being in contact with the finger, which has been already passed up the anus, the division of the sphincter may be effected by drawing both hands simultaneously downwards from the body of the patient, still keeping the finger and point of the instrument in firm contact. This operation removes the obstruction the sphincter muscle offered to the free passage of the fæces, which were consequently forced into the fistulous openings, but as the latter are destroyed by the operation, the sinuses readily heal, and in a short time the disease is completely removed. To secure the granulation of the wound, and prevent the mere adhesion of its cutaneous surface, the whole of the divided part should be filled with lint, and the bowels kept in a state of constipation for some days, so that there may be no interference with the reparative action. When aperients are administered, the patient should be made aware that he will have no power to restrain the evacuations of the fæces: this must, of course, be the result of the division of the sphincter ani. In cases of neglected fistula in ano, the sinuses sometimes open at a considerable distance from the verge of the anus; so that, if the operation be performed precisely according to the above description, a very extensive incision would have to be made through the gluteal region, to comprehend the whole length of the sinus. To avoid this, the operation may be modified as follows:—A probe is to be passed along the fistula into the bowels, and then bent by the finger in the rectum so as to bring the point out at the anus; the two ends should be drawn downwards to bring the sinus towards the surface; the probe is then to be cut down upon, just as it is entering the intestine above the sphincter, and, the probe-pointed bistoury being directed along the probe into the bowel, the probe may be withdrawn, and the bistoury made to divide the sphincter as already described. By this manner of proceeding two-thirds of the length of the fistula may remain undivided, and will readily heal, as there is no longer any cause for the fæces to pass into it. There is still another modification of the operation, which it may sometimes be advisable to adopt in certain cases of fistula, and I have myself had recourse to it. If on passing the finger into the bowel, for instance, for the purpose of examining the situation of the ulcerated opening, you discover that the hemorrhoidal vessels are abnormally enlarged, as indicated by the strength of their pulsation, you may employ a ligature, instead of a knife, for the purpose of dividing the sinus and sphincter ani. The mode of performing this operation is by passing an eyed probe (furnished with a strong silk) through the sinus into the bowel, bringing one end of the silk out of the anus, and leaving the other hanging from the orifice through which the probe had entered. The probe should then be withdrawn, and the two ends of the silk tied tight together so as to compress all the intervening structures: the ligature requires to be tightened daily, for the constriction becomes lessened as the ulceration advances. In the cases in which I have performed this operation, I was surprised to find that the patients complained of even less suffering than in the usual plan of proceeding; that the wound healed as readily, and did not require to be filled with lint, as, of course, there could be no tendency to unite by adhesion. I may also tell you, that the hemorrhage which sometimes follows the division of the fistula by incision is not only more alarming, but occasionally proves fatal: and, therefore, in cases where there are indications that a larger quantity of blood than usual is sent to the part, it is highly important to avoid incising these vessels; and this may be done by substituting the ligature for the operation by the knife. *Medical Gazette, Nov.* 10, 1848, *p.* 780.

108.—ON THE RECTO-VAGINAL FISTULA.—By Bransby Cooper, Esq., F.R.S., &c

[Speaking of cases of fistulous opening between the rectum and vagina, Mr. Cooper says:]

I am acquainted with a case in which a lady was the subject of this lesion; and, after every attempt had been made to sew up the fistulous openings of the rectum and vagina, and other plastic operations had been ineffectually resorted to, Mr. Copland restored the patient to health by the mere division of the sphincter ani, which not only prevented retention of the fæces within the rectum, but, at the same time, precluded the necessity for the action of the levator ani muscle. The contents of the rectum, no longer meeting, therefore, with any obstruction to their passage from the anus, had no tendency to pass into the vagina, the fissure in which immediately healed. A lady was lately under my care, who was the subject of a fistulous opening from the rectum into the vulva, through which the fæces in part escaped. On examining the case, I passed a probe from the vulva into the rectum, and found both openings were so near to the outlets of the rectum and vagina, that, by passing a bistoury and dividing the perineum, I should completely lay open the whole length of the fistula and the sphincter ani at the same time; and this operation I was at the moment much disposed to perform, as it seemed at once to afford the readiest and simplest mode of insuring a speedy cure; still, I had some misgiving as to the certainty of effecting the ultimate filling up of the wound; and I consulted Mr. Copland on the subject: he recommended me by no means to adopt this plan, as he had known it upon three or four occasions to be had recourse to, and in none of them did the patients ever recover the power of retention of the fæces; so that they were in a much worse condition from the operation than from the original disease. The mode I ultimately adopted, therefore, was, to divide the fibres of the sphincter ani muscle, and pass a probe covered with potassa fusa through the sinus, so as perfectly to destroy the mucous surface of the fistula. As the granulations thus produced did not seem to fill up the opening, I brought the surfaces of the fistula in contact by means of a ligature, which came away in a few days, and the opening into the vulva was much diminished, but still the communication between the two organs was not obliterated. I then daily applied the tincture of lytta to the granulating surfaces, and the lady left London, although it could not be said perfectly cured, with the prospect of the granulations becoming ultimately converted into permanent tissue.

These cases, as well as those of lesions between the bladder and vagina, are most difficult to cure; and I believe that, unless the division of the sphincter ani itself promotes their obliteration, although other means may be somewhat accessory, they are never sufficient to produce cure. My colleague, Dr. Lever, has had several cases of recto-vaginal and vesicovaginal fistulæ, which he has attempted to obliterate by plastic operations, and by sutures, caustic, and actual cautery: the result of his experience, is however, that very few persons are ever permanently cured, although, by means of actual cautery, he has frequently reduced the abnormal openings to the size of a pin's head, but I believe that only in one or two cases has he succeeded in producing a permanent cure.

Medical Gazette, Nov. 10, 1848, *p.* 781.

URINARY ORGANS.

109.—CASE OF STONE IN THE BLADDER.—By W. FERGUSSON, Esq. (Reported by H. Smith, Esq.)

[The patient was a man of twenty-five years old, who had suffered from symptoms of stone for three years. Upon sounding, it was with considerable difficulty that a stone could be felt. As, however, it appeared to be small, and as the introduction of instruments into the bladder caused little pain or inconvenience, lithotrity was determined upon. Mr. Fergusson accordingly introduced the lithotrite, but being unable to seize the stone with it, he at once proceeded to perform lithotomy. Mr. Fergusson's own remarks will explain the subsequent occurrences. He says:]

Nothing remarkable had occurred in the early steps of the operation, but at a later stage he had felt himself in a most unpleasant dilemma, having completely lost all trace of the stone; and notwithstanding his previous confidence that he had a case of stone to deal with, he was at one time fearful that this might prove one of those occasional instances where the surgeon, having cut into the bladder, had not succeeded in extracting the stone. The happy thought of passing an instrument by the urethra occurred to him, on doing which he immediately felt the calculus, where he had several times touched it before—about the neck of the bladder—and then, instead of passing his finger through the wound into the bladder, as he had hitherto done, he turned the point of it towards the bulb of the urethra, when he immediately detected the calculus, impacted in the membranous part of the urethra, exactly in front of the commencement of the incision into that part of the passage. From this point the stone had been extracted by means of the scoop, with the utmost facility, and thus the operation was concluded.

The stone was one of the smallest which he had ever removed by lithotomy; indeed, it might be a question with some, why such a stone should not have been left to pass away with the urine? But the answer to that was readily given; for as the patient had suffered for three years from its presence in the bladder, it was not very likely that it could have come away spontaneously.

Had he been aware of the exact position of the stone, he might possibly have removed it without cutting into the bladder at all. The wound which he had made into this part had, however, been of the smallest size for lithotomy, and he could scarcely fancy any additional hazard arising from it. He had, from previous examinations, been under the impression that the stone often lay in the neck of the bladder, yet he had not been prepared to seek for it actually in the urethra. He could only account for its being in that situation by supposing that in withdrawing the lithotrite, which was a flat-beaked one, with a short and acute curve, he must have caught the stone in the concavity of the instrument, and dragged it a certain way into the membranous portion of the tube. The small size of the concretion, and the considerable depth of the perinæum, had both tended to increase the difficulties of the case. Indeed, in all cases where the stone was small, he felt an uncertainty as to the progress of the operation. As regarded the mere performance of the operation, he had far less apprehension with a large than with a small stone before him, although the result of the operation might be expected to be less favorable.

Lancet, May 6, 1848, p. 493.

110.—CASE OF INCARCERATED CALCULUS.—By M. Roux.

[The patient, aged twenty-five, having suffered from symptoms of stone, M. Roux sounded the bladder, and]

The result was the detection of a hard resisting body, fixed in one spot, giving a sound on being struck, perceptible both by the surgeon and the persons around. The stone seemed to be situated towards the anterior part of the organ, a little to the right of the median line. From several circumstances it seemed to M. Roux that he had to do with an incarcerated calculus, although the situation of the body was not quite favorable to this opinion; for it is well known that concretions of this nature generally gravitate towards the inferior fundus of the bladder, and it is rather difficult to conceive how it could get incarcerated in the anterior wall. Bands, septa, or a tumor, could, on the other hand, not yield the clear sound which had been produced by percussion. The lateral operation was resolved upon, and it should be noticed, that before the incision was made, the existence of the stone was again verified by percussion. The bladder being opened, search was made with a great number of different instruments, and also by the finger, but no calculus could be found. The staff introduced by the wound, on being struck against the anterior wall, again produced the sound so often heard before, and the surgeon was, of course, thereby induced to hope that his efforts would at last be successful. He therefore continued the search for almost half an hour, but on finding that all was in vain, he desisted, and the patient was put to bed. Since the operation (about five weeks ago), no complication has interfered with the gradual cicatrization of the wound, which has since progressed very favorably. Although the cysts of incarcerated calculi generally form in the lower part of the bladder, stones have been known (Boyer) to get surrounded by a fold of mucous membrane under the symphysis pubis; and a case is mentioned by Lapeyronie, where the aperture of the cell containing the stone was quite hidden by a sort of membranous curtain entirely covering it. Meckel found, at a post mortem examination, all the coats of the upper part of the bladder grasping an enormous calculus, which was, in some degree, suspended. Ledran and Deschamps have recorded similar cases. B. Bell and Louis Leblanc mention patients in whom the bladder, contracting upon a stone, has entirely surrounded it, and thereby turned the organ into a bag composed of two cavities.

Verdier also relates that Bordenave wishing to practise lithotomy upon the subject, introduced a stone into the bladder. as usual, by an incision above the pubis. This same calculus could, however, not be found when the organ was entered by the perinæal wound, and the bladder being then examined, it was found divided into two cavities communicating with each other by a very small aperture. But as M. Begin remarks, in the "Dictionnaire de Medecine," the calculus may also, in following the oblique direction of the ureter, glide between the mucous and muscular membranes, and there go on increasing in size. Thus Ledran felt distinctly a stone impacted in the aperture of the ureter, and could not extract it at the time, though he succeeded a couple of months afterwards, when the incarcerating membrane had partially given way by inflammation. It will become pretty apparent, by the foregoing considerations, that there have been numerous cases where the diagnosis has been as doubtful, and the result as unforeseen, as in M. Roux's patient. This eminent surgeon is inclined to think that the calculus is lodged in the ureter; and as no untoward symptom has occurred, and the patient, continuing to suffer the same pain as before, is anxious to have something done, M. Roux has made up his mind to penetrate into the bladder above the pubis. *Lancet*, *May* 20, 1848, *p*. 544.

111.—CASE OF ENCYSTED CALCULUS.—By —— Peck, Esq.

[In this case, the presence of a stone was detected in 1840; but after drinking the Vichy water the symptoms almost disappeared, until a fortnight before the patient's death, in February, 1848, when he was attacked by pneumonia, and died from exhaustion. The disappearance of the symptoms was due, Mr. Peck supposes, to the stone having become encysted soon after he took the Vichy water. After death, Mr. Peck tells us,]

The bladder was removed and opened; in it were found two calculi, *loose*, oval in form, and flattened, one weighing five drachms eight grains, the other four drachms forty-four grains; they were about the size of small pigeon's eggs, rough, but with the more prominent asperities slightly rubbed down, each with a small spot where they had apparently lain, the one upon the other; at the apex of one was a small conical projection, apparently a fresh deposit. The coats of the bladder were thickened, and covered with a muco-purulent matter; the vessels congested. The third lobe of the prostate gland was slightly enlarged. On the right side of the fundus of the bladder was found a pouch, formed by a protrusion of the mucous coat of the bladder through the muscular fasciculi, capable of containing about an ounce of fluid; it was empty, with the exception of some muco-purulent matter. *Prov. Med. and Surg. Jour., July* 12, 1848, *p*. 366.

112.—NEW OPERATION OF LITHOTOMY.—By Dr. Maisonneuve.

A joiner, aged 28 years, intending to remedy an obstruction of the urethra, introduced into the duct about two years since a piece of wire, to the extremity of which was attached a fragment of cork, one inch in length and four lines in diameter. The cork accidentally loosened from the wire, and, falling into the bladder, became the nucleus of a concretion. M. Maisonneuve admitted the patient into the hospital on the 20th of August, 1847, and on account of the presence of the cork, resolved upon performing lithotomy in preference to lithotrity. The patient having been placed in the usual position, and the grooved staff being introduced into the bladder, the surgeon passed the index of the left hand into the rectum, and in front of the anterior angle of the prostate recognised the groove; through the membranous portion of the urethra, and above the sphincter, a knife enveloped in linen up to within four lines of its point was conducted along the finger and readily punctured the urethra, penetrating into the groove of the staff. Into this aperture the lithotome was introduced and passed into the bladder, where the blades were opened to the extent of fourteen lines. The index and medius fingers of the left hand were then used for the purpose of dilating the intestine and for the protection of the sphincter ani. The lithotome was withdrawn, and the forceps, after some research, removed the calculus. On the second day after operation, slight febrile excitement was noticed, but on the third the urine was voided from the urethra. On the fourth day the patient was up for six hours; nine days after lithotomy he took a very long walk without any inconvenience, and seventeen days after it had been performed he returned home. He has since continued in perfect health.

Many years ago, M. Sanson proposed extraction of vesical calculi through an incision of the rectum. He proposed two methods, both of which differ considerably from the present. One consisted in dividing the rectum above the prostate, and was very soon abandoned; the other closely resembling the plan brought forward by Vacca Berlinghieri, comprised in the incision the sphincter ani and the perineum as far as the bulb. In M. Maisonneuve's process the sphincters remain untouched, and a preliminary incision of the soft parts is not necessary for the purpose of detecting clearly the precise position of the groove of the staff. The involuntary contractions of the sphincter do not constitute an objection to the operation, as they can easily be prevented by anæsthetic inhalation. At the same time morbid enlargement of the prostate, or considerable hemorrhoids, might form an insurmountable obstacle to the performance of the new operative process. The remarkably rapid recovery of the patient after the operation is attributed by M. Maisonneuve to its nature, the incision being protected from the contact of air, and being in some measure placed in analogous conditions with subcutaneous sections, the consequences of which are comparatively unimportant.—*Union Medicale.* *Medical Times, June* 3, 1848, *p.* 73.

113.—CASE OF RETENTION OF URINE.—By W. M. Fairbrother, Esq.

A remarkable case of retention of urine came under my notice last week. The patient, a female about 30 years old, who had been under the care of a practitioner in her neighbourhood for one week, when seen by me was suffering from irritative fever, while an immense tumor, extending from the pubes to the navel, occupied nearly two-thirds of the abdomen, and presented, on percussion, the ordinary sign of fluid in a cavity. The female catheter had been introduced, by the gentleman in attendance, two days previously, some urine was drawn off, when it suddenly stopped. It was again introduced during my visit, and no urine flowing, I considered that the distended bladder had drawn up the neck of that viscus from its natural situation, and elongated the meatus. I then had recourse to an ordinary gum-elastic male-catheter, without the stilette, and nearly seven imperial pints of urine were drawn off.

I mention this case, to remark what extraordinary powers of endurance were manifested here, that a rupture of the bladder should not have taken place. *Lancet, Aug.* 12, 1848, *p.* 175.

114.—IMPROVEMENT IN CATHETERISM.—By W. N. Spong, Esq., Aylesford.

[Mr. Spong proposes the following simple contrivance in those cases where from the rupture of a vessel in case of enlarged prostate or of stricture near the neck of the bladder, the eye of the catheter becomes plugged with coagulated blood, and the urine is prevented from passing.]

The coagulated blood may be either dislodged or prevented from entering the eyes of the instrument. While the instrument is in the bladder, it may be dislodged by applying a common syringe to its orifice, and firmly pinching the point of junction of the two instruments between the finger and thumb. If the piston is now briskly drawn up, the clot of blood is sucked into the cylinder of the catheter, and the urine flows freely. A good syringe, capable of holding a fluid ounce, is sufficiently powerful. This manœuvre is applicable to either a silver or a gum-elastic catheter. The clot might be dislodged by injecting; but that process is out of the question, for the bladder is too full already. The blood or mucus, or whatever it may be, is more certainly dislodged if the catheter be filled with warm water previous to its introduction, and thus passed into the bladder, with the thumb over the orifice, to prevent escape; but this is only applicable to a metallic instrument.

Another object is, to prevent the coagulum entering the apertures, which coagulum is smeared into them during its passage. A piece of silk or thread is required for this, which must be lightly forced down to the beak of the instrument by means of the stilette, a small piece at a time, taking care not to break the thread until the eyes are plugged, the finger being held over them during the process. A few inches must be left hanging out beyond the handle of the instrument, taking care that the plug of thread or silk is level with the apertures. The instrument is now ready for introduction, which being accomplished, the thread is withdrawn, and the urine follows.

This simple contrivance best succeeds with the silver catheter, because it can be introduced without the stilette; but it can be also employed with the gum-elastic instrument, as follows:—Tie the piece of thread firmly to the end of the stilette, and pass it completely down to the beak of the catheter; then draw out a few inches of silk through the eye, and plug the aperture from without. The stilette remaining stationary, cut off any superfluity, and in using it draw out the silk first, or the stilette and silk together, as may be most convenient. Gum catheters having only one aperture or eye, this proceeding is easily accomplished. *Lancet, June 3, 1848, p. 606.*

115.—TREATMENT OF URINARY DISCHARGE FROM THE UMBILICUS, IN INFANTS.—By Bransby Cooper, Esq., F. R. S.

In infancy it is not uncommon for a urinary discharge to take place from the umbilicus, in consequence of the open state of the urachus: in such a case you should first ascertain that there is no obstruction to the passage of the urine through its natural canal, and if that should be the case, as frequently happens from congenital phymosis, the cause of the obstruction should be removed, and then, upon gentle pressure being applied to the umbilicus, the urachus generally closes, although there have been instances in which the defect was never remedied. *Med. Gaz., Sept. 1, 1848, p. 354.*

116.—CASES OF HYDROCELE TREATED BY IODINE INJECTION IN THE PRACTICE OF DR. BELLINGHAM.

[In the first case related, the hydrocele was of three years standing, and had been several times tapped, but filled again.]

The trochar was introduced, without any preliminary incision in the integuments of the scrotum being made, and the fluid withdrawn. A solution consisting of a drachm of iodide of potassium, dissolved in an ounce and a half of water, to which four drachms of the tincture of iodine of the pharmacopœia was added, was then injected. Immediately upon its introduction the patient complained of very severe pain, which he referred to the cord and scrotum on that side: no pain in lumbar region. The fluid was permitted to remain for little more than three minutes when it was withdrawn.

[The treatment in this case, and in two others which are related, was successful. After remarking on the various kinds of injections used for the radical cure of hydrocele, and particularly on the formulæ of MM. Velpeau and Blandin, the writer observes:]

These modes of using iodine for the radical cure of hydrocele appear to be objectionable, because the action of the iodine must be partial, and more energetic upon some parts of the sac than upon others; indeed, the undiluted tincture injected into the cavity of the tunica vaginalis would seem to be more likely to excite the suppurative than the adhesive inflammation. A modification of this plan, however, first suggested by Mr. Adams, of the London Hospital, appears to be free from this objection; this consists in introducing through the canula, after the evacuation of the fluid, a camel's-hair pencil dipped in tincture of iodine, with which the interior of the sac is painted.

The injection for hydrocele recommended by the continental surgeons, made by mixing tincture of iodine and water, appears to be likewise objectionable; because, as iodine is scarcely soluble in water, when the two liquids are mixed, the iodine in substance will be precipitated, and coming in contact with the lining membrane of a portion of the sac will be liable to excite an unnecessary amount of inflammation there. The surgeons who have reported in favor of this mixture appear to have referred too much to the iodine, and too little to the rectified spirit which forms the menstruum of the tincture; in fact, a mixture of one part rectified spirit (such as is used for making the tincture), and two parts distilled water, without any iodine, if injected into the tunica vaginalis, would, in the majority of cases, excite sufficient inflammation to bring about a radical cure.

In the foregoing cases, the inconvenience of the precipitation of the iodine was avoided by adding a sufficient quantity of iodide of potassium to render it soluble in the water; about one drachm of this salt was found to be sufficient to render the iodine of four drachms of the tincture soluble in an ounce and a half of distilled water. The formula for the injection used in these cases was the following:—℞. Iodid. potassii, drachmam.; solve in aqua distil., ℥iss.; dein adde tinct. iodinii, ʒiv.; fiat solutio. In using this solution it is not of any importance if all the fluid injected does not return; any which remains will be quickly taken up by the absorbents.

In conclusion, I may observe that it is generally advisable in the operation for the radical cure of hydrocele by injection (no matter what the nature of the fluid used), not to make any preliminary incision in the integuments of the scrotum; as the canula will be then grasped more firmly, there will, therefore, be less risk of its slipping out, or of the fluid being injected into the cellular tissue of the scrotum.

Dublin Medical Press, Aug. 30, 1848, p. 139.

117.—ON THE TREATMENT OF VARICOCELE BY PRESSURE.—By Dr. L. R. Thomson, Dalkeith.

[In Retrospect, Part XV., p. 234, will be found an article on this subject by Mr. Curling, who recommended the use of the moc-main lever truss. Dr. Thompson thinks that he has invented a more efficient instrument, and strongly recommends the plan of treatment by pressure, for, as he observes, varicocele not being a dangerous disease, a serious operation for its removal is unwarrantable. It is important to remember, that in applying pressure for the relief of varicocele, we are not to attempt to obliterate the veins. Dr. Thomson remarks:]

The plan I am advocating does not aim at obliterative pressure—it only seeks to restore the diseased vessels to their natural tone and calibre. This is to be effected by maintaining such an amount of firm, steady, and equable pressure over the external abdominal ring as shall not permanently obstruct, merely afford the weakened vessels proper support at that point, so as to remove the superincumbent weight of the blood from the distended veins below. That the pressure shall temperarily supply the place of valves, rendered incompetent from over distention, is the important desideratum. When the vessels shall have regained their wonted strength and size, then the valves will resume their proper function of resisting hydrostatic pressure. After this end is gained, a cure is established. When properly applied, there is not the slightest risk of the pressure acting injuriously on the testicle, by interfering with the circulation of the spermatic artery. So far from such a result occurring, the testicle will resume its natural size under the influence of pressure, though formerly atrophied on account of the affection. The venous return will be carried on by the vessels not affected with the disease, and probably also to a certain extent by some of the diseased vessels themselves. We are aware that some difficulties in relation to the forces moving the blood, and the pressure exerted by that fluid on the vessels, are presented to the clear comprehension of this theory. And we would here observe, that we rest the claims of this mode of treatment on its practical results, and not on the theory advanced to explain it.

It will be seen from the foregoing statements that a nice adjustment of pressure is necessary. The instrument used by Mr. Curling for this purpose is what has been called the moc-main lever, or Evan's patent truss. This instrument has only a lever spring. Though devoid of a circular spring, I believe it to be sufficient for the cure of most cases of cirsocele, but not without causing great discomfort, when much pressure is necessary to support the superincumbent weight of the blood. In cases of old standing, such as the one given in this communication, it may even prove unequal to this task. The discomfort does not arise from the pressure exerted by the pad, for it seems superior to others in this respect, but from the tightness with which it is necessary for the encircling belt to be drawn when much pressure is wanted.

The moc-main truss being faulty in these two particulars, *i. e.*, not always able to keep up the varicocele, and giving rise to uneasiness from the tightness with which it is sometimes necessary to fasten the encircling belt—I was led to contrive a different and more efficient kind of instrument. This is a combination of the ordinary spring and lever truss; it has therefore a circular and a lever spring, to the former of which the pad is attached in such a manner as to admit of slight enlongation. The pad may or may not be stuffed with moc-main; the simple cork and flannel pad will be easily borne in most cases. The length of the pad should depend upon the extent of the disease.

In concluding these remarks, we should repeat the great principle of treatment to be, the application of such an amount of pressure at the external ring as shall take off the weight of the column of blood from the distended veins below, and, in this manner, permit of their returning to their natural tone and dimensions. I am convinced that the chief element in this method of cure must be the relief afforded to the over-distended vessels by the removal of *superincumbent* pressure. That the superincumbent weight of the blood does act injuriously, and that its removal must act beneficially on a varix, may be easily demonstrated. To illustrate the point, we prefer quoting a great authority to giving any statement of explanation of our own. The illustration was made on a patient who had an unusually large cluster of varicose veins on the inside of the leg, "while the *vena saphena major* was of enormous diameter. If I put on a bandage," says Sir Benjamin Brodie, "and squeezed the blood out of the veins below, and then put my thumb on the *vena saphena* above, so as to stop the circulation through it, I found, on taking off the bandage, the patient being in the erect posture, that the cluster of veins below filled very slowly, and only from the capillary vessels." But on removal of the pressure, the valve of the vein being useless, "the blood rushed downwards by its own weight, contrary to the course of the circulation, and filled the varicose cluster below almost instantaneously." *Monthly Journal, Nov.*, 1848, *p.* 296.

SYPHILITIC AFFECTIONS.

118.—ON THE TREATMENT OF VENEREAL DISEASE GENERALLY.—By M. RICORD.

[At the end of this course of lectures on venereal disease, published in the Lancet, M. Ricord gives the following recapitulation of the doctrine he inculcates:—]

The great class of venereal diseases comprises two very distinct orders—first, the non-virulent diseases, the type of which is blennorrhagia; the second, the virulent diseases, the type of which is chancre.

First order.—The blennorrhagic affections do not taint the constitution, are not transmissible by hereditary, and never yield any positive results by inoculation either on the skin or mucous membranes: they are contagious in the manner of irritants, the simple catarrho-phlegmonous discharge being the most common form.

Second order.—The *virulent* affections owe their origin to a peculiar principle to an ulceration which can be reproduced at will, and inoculable within a certain period. The ulceration always springs up at the very spot where the virulent matter has been implanted, and its evolution takes place in a variable space of time. The virulent effect may remain strictly local, and merely give rise to consecutive phenomena, of which the most common is the suppuration of the (inguinal glands; but it may penetrate into the economy, and determine in the same a set of characteristic symptoms. The general infection of the system is the result of an idiosyncrasy which does not invariably exist in every individual. The most tangible phenomenon of this infection is the specific induration of the chancre. There is no such thing as a specifically indurated chancre, without subsequent symptoms of constitutional syphilis. Once or twice in a hundred cases the induration may be ill-defined, and pass unnoticed; but if the attention be directed to the inguinal glands) which inevitably suffer by the infection), the existence of an indurated chancre may, by their state, be inferred; for a bubo, consecutive to such a chancre, *never* suppurates specifically. There is no constitutional syphilis without a primary local accident. When the infection has taken place, we may look for the secondary manifestations within a twelvemonth. But if a mercurial treatment be used, these manifestations may be prevented or retarded for more or less time, or perhaps forever. When no treatment, however, has intervened, there is an admirable order in the succession of the manifestations, which is denied only by those people who will not be convinced. Primary, consecutive, secondary, transitory, and tertiary accidents follow each other with the most perfect regularity. But I repeat it—a treatment breaks up the order altogether. If a mercurial course has been gone through, the secondary manifestations may, under its influence, be retarded for a variable time; but it does not destroy the diathesis, and merely postpones the secondary symptoms. On the other hand, you will remember that the mercurial treatment does not prevent tertiary accidents, and these may even appear whilst the secondary symptoms are being kept off by mercury; the latter may then make their appearance *after* the tertiary accidents have disappeared, and thus the order of the manifestations may be totally inverted. Constitutional syphilis can be contracted but *once*—the diathesis can never be doubled. The diathesis persists, but the manifestations are not certain or inevitable. This diathesis is not incompatible with health. Syphilitic cachexia is very rare. The non-virulent affections require no specific medication, neither do the virulent primary accidents; mercury is used for the latter only in exceptional cases; namely, where the chancre is indurated.

Constitutional syphilis demands a mercurial treatment; but when the later secondary symptoms and the tertiary have come on, mercury should be abandoned, and iodide of potassium be taken up. The latter is then the medication *par excellence*. Whenever we have to treat any peculiar disorder or aftion of the viscera, along with syphilis, we should never lose sight of the indications which belong to that intercurrent disease, and should even delay the specific medication, if found necessary.

[Dr. de Meric, the reporter of these lectures, subjoins a list of the formulæ used by M. Ricord at the Hospital du Midi, which will be found in our Synopsis at the end of this volume.] *Lancet, June* 24, 1848, *p.* 681.

119.—ON THE TREATMENT OF TERTIARY SYMPTOMS.—By M. Ricord.

[Tertiary symptoms, M. Ricord observes, will not inevitably occur in the course of syphilis, but they are very likely to do so if the treatment of the primary and secondary symptoms be not conducted with the greatest care. As soon as ever the tertiary period has set in, mercury must be abandoned, and iodide of potassium given. Nay, further, as mercury, taken in time, may prevent or retard secondary symptoms, and so may be regarded as a prophylactic against them, so may iodide of potassium be regarded as a prophylactic against tertiary symptoms; and therefore M. Ricord observes,]

To render the treatment of secondarary syphilis complete and rational, it should always be followed by the exhibition of iodide of potassium. This substance is, however, not only useless, when employed against secondary symptoms and those of transition, but very often hurtful; yet, when secondaries have been of long standing, it may produce beneficial effects; it is also useful as an adjuvant of mercury, in those affections which in some degree lie between the secondary and strictly tertiary manifestations; and, finally, it is indispensable for combating the symptoms of a decided tertiary nature. Walsh was the first practitioner who used iodide of potassium, as an anti-syphilitic agent; before him, this peculiar power was perfectly unknown. But his experiments were more calculated to cause the entire rejection of the remedy, than to favour its general adoption, for he gave it for all affections which were then looked upon as syphilitic—blenorrhagia, epididymitis, chancres, &c. I have been at much pains to ascertain its action, and after many trials, I have arrived at the conviction, that its effects are limited to accidents of transition between the secondary and tertiary periods, and to the tertiary symptoms themselves. It is likewise a mistake to suppose that the iodide of potassium cannot act unless the patient have previously been subjected to a mercurial course. Any syphilitic accidents should be treated according to the medication essentially fit for them, without paying much regard to the means used anteriorly. In order to become well acquainted with the proper manner of administering the iodide of potassium, we should take the trouble of studying its effects, independently of its curative action. First let us see how it acts on the skin. It may produce on the cutaneous surface diverse psydracious and acnoid eruptions. The pustules are generally surrounded by a vividly red areola, and the usual seat of these eruptions is *below* the umbilical region, as the nates, thighs, &c., whereas the common acne (not to mention its other characters) is mostly situated in the upper half of the body. To these peculiarities, it may be added, that the pustules will fall in immediately the administration of the iodide is interrupted. Exanthemata, impetigo, and lichen, are very apt to be produced by the use of this salt; and what you ought especially to keep in mind is, that ecchymosis, and purpura in the inferior exrremities, are sometimes caused by the action of the iodide of potassium. The effects of the latter on mucous membranes should also be carefully observed. It may cause inflammation of the conjunctiva, the sub-mucous cellular tissue lying under which gets then infiltrated and puffed up; the eyelids turn red and œdematous, and when the inflammation and effusion are not arrested, the internal parts of the eye become involved in the affection, and photophobia is the result of this state of things. The normal mucous secretion is always a little increased, but it does not take the muco-purulent character, as in the case of catarrhal ophthalmia. Coryza, of a more or less severe nature, often exists at the same time: it is preceded and accompanied by headache, and a pretty abundant mucous secretion; but this coryza never reaches the suppurative state: it never produces more than a catarrho-serous flux. These affections never give rise to any fever, and they disappear as soon as the iodide is given up. This coryza is an accident which we should not overlook, for it is of importance to avoid it when we have to treat a tertiary affection of the nasal fossæ. As for the effect of the iodide on the intestinal canal, I have to state that persons enjoying good health can bear very large doses of it; I have given as much as fifteen drachms a day. M. Puche has often given ten drachms per diem, after commencing with six; and it has been noticed that it improves the appetite of the persons who use it. With some patients a certain pleurodynic sensation, corresponding to the cardiac extremity of the stomach, is felt after its ingestion, but it never causes vomiting. The sub-mucous cellular tissue of the stomach may, by the use of this iodide, undergo the same modifications which we have noticed the conjunctiva to be subject to—a sort of hyper-secretion and intestinal ptyalism take place, and much of the fluid which ought to have been secreted by the skin is rejected by the mouth. This liquid has a slight taste of iodine; it is not fœtid in the least: the gums are not swollen, and there is no fœtor in the breath, as happens in mercurial ptyalism. The same effect may be produced on the other portions of the intestinal canal; the patients are then seized with abundant serous diarrhœa. The iodine is eliminated from the system by the kidneys; half an hour after the ingestion of it, its presence may be ascertained in the urine, and it should be remembered, that the presence of iodine in the blood increases the renal secretion. I have even observed a case of polydipsia which went on as long as the iodide was used, but disappeared when the latter was discontinued, and gradually sprang up again as the use of the salt was resumed.

The effects of the iodide of potassium on the circulation are of a sedative kind; it diminishes the number of arterial pulsations and lowers their force, but they may regain their normal standard if the remedy act beneficially on the system: the same aterial energy may also reappear when the iodide causes a slight phlegmasia. This salt is somewhat antiplastic, for it has rather a tendency to liquefy the blood, and may even produce the peculiar hemorrhages of purpura. When the effect of the iodide on the nervous system is carefully watched, it is found to cause a certain excitement of the nervous centres, followed by a little uncertainty in the movements and in the intelligence.

Doses and Forms.—If the efficacy of the iodide of potassium has ever been doubted, it is because no one would venture to give it in doses sufficiently large to test it fairly. Most practitioners confined themselves to three or four grains a day—no wonder that no effects were produced. The daily dose ought to be fifteen grains to begin with; two or three days afterwards, forty-five grains may be given every day in three distinct doses.—If the remedy has no pathogenic effect we must be guided by the therapeutic action, so that if the curative effect be not apparent at all in three or four days, the dose should be augmented. The influence produced on the osteoscopes may very well serve as a criterion of the action of the remedy, provided these osseous pains do not arise from suppuration, and they be strictly a result of the diathesis. I have had patients in whom the removal of these pains required as much as one drachm and a half, two drachms, and even three drachms per diem. When a certain dose has once been fixed upon, it ought to be persevered in as long as the therapeutic effect is evident, and so long as the pathogenic action is not alarming. But the medical attendant must in this matter, as in many others, use his judgment, and regulate the modifications which the treatment is to undergo, according to the peculiar circumstances of the case.

Forms.—The iodide of potassium has been given in capsules, in solution, in syrup, &c.; rarely in the form of pill, for this salt is very deliquescent; I generally give it in syrup, and I have found bitters to be the best adjuvants—viz., syrup of gentian, of saponaria, of quassia, *de cuinisier*, of sarsaparilla, &c. One pint of syrup is to be used for one ounce of the iodide, which will give about twelve grains to the spoonful; the same quantity may also be given in the sweetened mistura acaciæ, or in the syrup of poppies, or of lactucarium. As to the diet, it ought to be of a tonic and regenerating nature—chops, steaks, wine, porter, &c. You see, therefore, that we know pretty well what ought to be the daily dose of the iodide, but we are not so well informed as regards the absolute quantity which can be given with safety; it is impossible to fix this beforehand. Neither do we know exactly how much time this medication may be continued in order to free the patient from the possibility of a relapse. I will merely repeat here what I said about the mercurial medication—namely, that the iodide must be kept on for as long a time as will fairly warrant us in supposing that it has done its duty; but you must recollect that neither this salt nor mercury is a certain and unfailing protection against relapses. Yet I must say that patients who have persevered with the iodide for three or six months have remained a long time without fresh attacks, and they will perhaps never experience any.

There is no occasion for fearing (as some practitioners do) that glandular organs will be in danger of undergoing the process of absorption by the use of iodide of potassium. This apprehension is quite unfounded. If these organs are not diseased, they will not diminish under the use of the iodide, as this substance exercises its activity only upon tissues attacked with tertiary affections. You must be careful to modify the treatment just described according to certain peculiar manifestations. For instance, when you have to contend against syphilitic sarcocele, and the same is exempt from complications, it will be sufficient to use the general treatment.

But when there is much inflammation, you must have recourse to antiphlogistics and emollient applications; and if it were noticed that the testicle is suffering both from syphilis and struma, anti-scrofulous remedies should be added to the usual treatment of such cases. The plastic effusion will be efficiently controlled by rubbing the part with the mercurial ointment, and covering the whole with a soothing cataplasm; and much benefit will likewise be derived in these cases by the methodical compression with strips of plaster, which was spoken of when I considered epididymitis. If you have elastic tumours of the testis to treat, the best practice is to open them as soon as fluctuation is detected, and you should have recourse to sedative applications when you perceive that they are surrounded by an inflammatory areola. But when the ulceration presents no redness, nor any symptoms of irritation, a very good wash may be made with a solution of iodine in the proportion of one half or a whole drachm to 12 ounces of distilled water; and when this solution is being prepared, a certain quantity of iodine of potassium should be added, to prevent the precipitation of the iodine. If the granulations of the tertiary ulcerations are too prominent, they should be destroyed with the pate de Vienne, or any other caustic.

When elastic tumours are not situated in the scrotum or testicle, they may be attacked by every energetic means—viz., mercurial frictions, Vigo's plaster, blisters followed by irritative dressings, as advised by Malapert, &c.; and where suppuration has occurred, the matter should be freed without delay. As for the elastic tumours situated on the mucous membrane of the nasal fossæ or mouth, they may be very beneficially acted upon by lotions containing a solution of iodine, in the proportion of two to six parts of this substance to one hundred of distilled water; in fact, the proportion of the iodine may be increased as long as no pain is produced by the application.

The muscular retraction, or plastic degeneration of the muscles, requires local applications besides the internal remedies. Topically, I use circular compression, carefully applied with strips of Vigo's plaster.

Lancet. June 17, 1848, *p.* 656

120.—ON GONORRHŒA IN THE FEMALE.—By. Dr. Egan.

Dr. Egan, in the Dublin Quarterly Journal, has given a statistical summary of the particulars of 112 cases observed in the Westmoreland Lock Hospital, from which it will at once be seen that gonorrhœa in the female is not confined to the vagina, but extends itself to the uterus, involving the neck and very frequently penetrating the cavity of this organ; and thus, by a vitiated secretion of muco-purulent matter from the cervix uteri, or from the internal lining membrane of the uterus, the disease may be kept up for an indefinite period, while the vagina may be perfectly healthy. Such was the case in fourteen instances detailed, in which no disease of the vulva or nymphæ was apparent, while a copious discharge was the result of a diseased state of the uterus. In ninety-eight cases the vagina presented a more or less inflamed appearance. In thirty-eight, granular erosions were apparent on the cervix uteri, with attendant induration in six. In fifty-seven, the os and cervix exhibited an erythematous condition, generally accompanied with engorgement and slight induration. In six, there was hypertrophy of the anterior lip of the os uteri. In six, there was enlargement of the posterior lip. In thirteen, both lips were equally engorged. In ninety-seven, the uterus participated in the disease, which was evinced by a muco-purulent discharge from the os.

Medical Times, June 10, 1848, *p.* 89.

Dr. Egan says the most successful plan of treatment is that recommended by M. Ricord, which consists in the application of solid nitrate of silver to the sides of the vagina and neck of the uterus; the immediate effects of this application will be to increase the discharge, but it will, after a few repetitions, either diminish it considerably, or arrest it altogether. The acid nitrate of mercury may be applied to the same diseased structures with like beneficial results. In many cases of inveterate amenorrhœa, which had resisted every form of constitutional treatment, the direct application of caustics to the cervix uteri was followed by a re-establishment of healthy uterine secretion, at first scanty, but after a short time normal, both as to quality and quantity. The separation of the walls of the vagina by means of a plug of lint will assist materially in the cure of the disease. From the frequent participation of the uterus in the disease, injections of nitrate of mercury and silver have been repeatedly recommended to be thrown into the cavity of the organ. Some danger attending this operation, as a substitute unattended with danger, a finely-pointed pencil of nitrate of silver is recommended to be introduced through the os, and allowed to remain in contact with the lining membrane of the uterus for a minute or two. Conjointly with topical applications, preparations of steel, more particularly the compound iron mixture, have been found very efficacious in restoring the uterus to its original healthy condition.

Medical Times, June 17, 1848, *p.* 112.

121.—ON THE TREATMENT OF GONORRHŒA IN THE FEMALE.—By Dr. R. G. Mayne, Surgeon to the Leeds Lock Hospital.

[Observing the inefficiency of the ordinary treatment in some cases of this affection, and finding by the use of the speculum that when the vagina seemed approaching the healthy state, a thick muco-purulent matter still oozed abundantly from the inflamed and puffy lips of the os uteri, Dr. Mâyne was led to conceive that the neck and even cavity of the uterus formed a sort of laboratory from which the vitiated secretion issued, to reinfect continually the vaginal membrane.]

"Accordingly," he says, "after some hesitation as to taking so great a liberty with a reputed delicate organ, I boldly introduced the solid nitrate of silver well through the neck and into the cavity of the womb, on three occasions, with an interval between them of about a week, and was gratified in finding that this proceeding perfected a cure, without a single bad consequence, and scarcely with any sensation of pain from the remedy. This was in one of the two cases mentioned; but in the other, the patient having been taken seriously ill from very different causes, I cannot certify the result."

[Dr. Mayne shortly afterwards found that Dr. Egan of Dublin entertained, and had published similar views, as to the uterus being involved in the disease. This gentleman also agrees with Dr. Mayne that the treatment of gonorrhœa in the female must be based on different grounds from that of the same disease in the male.]

Dr. Egan observes, "Balsams and cubebs, which are found so efficacious in the treatment of this affection in the male, prove almost inert in the female;" and the fact is *more* than borne out by my own experience; but as that gentleman gives no reason—at least none appears in the extract in question—why they should be so, I beg leave to state my own account of the matter. M. Ricord has established pretty clearly, tnat the action of these substances is strictly local, and that their curative effect on the diseased mucous membrane of the urethra is solely produced by their becoming mingled with the urine, and being in this way brought into direct contact with the affected surface as often as the contents of the bladder are discharged. Hence their unquestionable efficacy in this disease in males, which, under ordinary circumstances, involves the lining membrane of the urethra alone; but hence, also, they are not of the slightest use in the treatment of females, excepting only in the comparatively rare instance of the urethra in them being also included in the attack; nor will they then be of any service, save as a remedy for the urethral portion of the diseased surfaces. I have long acted on this conviction, both in hospital and in private practice, and the results have satisfied me of its truth.

Another idea arising out of this conviction, and carried out in my practice, has yielded proofs of its title to consideration—namely, that *copaibal injections*, as presenting the closest imitation of the mode of action when copaiba is taken into the stomach, would be most likely to correct the vitiated condition of the vaginal membrane, copaiba being, after all, the sheet-anchor to which our various floating theories of medicinal treatment have to trust. I have found the disease obedient to the use of these, more than of any other kind of injection usually employed. Their proper strength it is not easy to fix, as this must necessarily vary according to age, idiosyncrasy, habit, &c., the same injection producing in one patient all that is to be desired, without sensation of pain; and in another, or in the same at a different period, perhaps an intolerable degree of "rawness," as it has been expressed to me, and suffering, so as altogether to forbid its use for a time. About a drachm of the soluble balsam, however, to a pint of water, will be found generally applicable, the practitioner increasing or reducing this proportion as he sees fit.

It appears requisite to say a few words as to the manner of applying the injection; for on that, I am persuaded, greatly depends its success; and it is no uncommon thing for the patient to assert she has done everything you directed her to do, for weeks or even months, yet feels herself no better, when it is found, by some accidental expression or remark, that from a misapprehension of your meaning, or neglect of your instructions, she has done scarcely anything as you desired. The patient having placed herself in a half-recumbent posture, a female-syringe, charged with copaibal solution, must be introduced by her left hand, fully as far as the nut of its base, into the vagina, and the external parts are to be firmly pressed by the same hand around the instrument, to prevent escape of the injected fluid; the piston is then to be slowly pushed into the cylinder by the forefinger of the right hand, so as to discharge the contents into the vagina, where both injection and instrument (which latter cannot be withdrawn without being accompanied by the former) are to be retained for at least five minutes, the right hand being now made to assist the left in securing its complete retention for this space; the whole to be repeated four times a day, or oftener. A further improvement on the customary method of using injections in this disease seems worthy of mention. Existing alone, or where combined, as it often is, with leucorrhœa, the entire vaginal passage is coated over with a thick, or glaizy mucus, or muco-pus, sufficient to protect, in considerable degree, the subjacent membrane against the irritating qualities of the injected fluid. And it would be found that the latter has had little other effect than to convert this mucus or muco-purulent coating into a white ropy substance, leaving the vitiated condition of the secreting membrane scarcely affected by the remedy. To overcome this difficulty, it is advisable to remove, as completely as possible, this ropy mucus, and repeat the process of injecting immediately, upon each of the four or more occasions daily of its use. By this means the membrane will be more certainly placed in direct contact with the copaiba, just in exact imitation of the natural means for its regular administration, if taken into the stomach, when the disease is in the urethra. It will be highly advantageous, also, to insert, as far into the vagina as may be, a piece of lint about six inches square, folded in four, or a breadth of about an inch and a half, and saturated with copaibal solution, there to remain during the intervals of applying the syringe, both as a means of keeping the diseased surfaces apart, and of maintaining the curative influence of the copaiba.

I now come to the still more interesting and important part of the subject—the treatment of blennorhœa in the female, in those intractable cases in which the most careful and assiduous use of the entire means already noticed is effectual only so long as persevered in; and in which, time after time, as soon as desisted from, the disease reappears. It is to be recollected, that on the continent, where matters of this nature have been examined with much more minuteness of inquiry than in this country, the true anatomical character of the lining membrane of the womb, whether mucous or serous, or partly both, is even yet a subject of dispute, and that it is comparatively only of late date that we have learned how rough a degree of handling that important organ will bear, without any serious effects being induced. Enough has been said as to what I considered to be a new view of the cause of disappointment, two years ago successfully acted on by me, as already stated; and little can be added to the notice previously taken of the treatment adopted on the occasion. It is reasonable to judge, however, that the copaibal solution would prove as curative of the mucous membrane of the uterus under this disease, as it does in that of the vagina in the same state, the objection to its use for this purpose being the difficulty, or impossibility, of properly applying it. Therefore did I use the solid nitrate of silver, and with the expected beneficial result; but I have since employed an ointment of six or eight grains of the salt to one drachm of axungia, to which I give a decided preference, as more certain to extend the cauterizing effect over the entire internal surface, and as obviating all risk of a very awkward, and by no means impossible occurrence—the breaking of the caustic pencil and lodgment of a part in the uterus! The same ointment may in like manner, and for a like reason, be employed on the vagina, where desirable, in lieu of all kinds of injection; and is capable of being more efficiently applied than the *firing process* adopted by Ricord, and approved as "the most successful plan of treatment" by Dr. Egan—viz., the direct application of the solid nitrate of silver to the sides of the vagina. To sum up, it appears that

1. In the treatment of blenorrhœa in the female, copaiba, cubebs, and all similar substances employed as constitutional remedies, are useless, except only where and so far as the urethra is implicated.

2. A solution of copaiba promises to be more efficacious than any other kind of injection, on the principle of the ascertained *modus operandi* of this substance, internally administered, for this disease in the male.

3. The perplexing intractability of certain cases frequently depends on the neck and cavity of the uterus being involved in the disease. In such, recourse must be had to caustic, the most convenient form being that of ointment introduced by means of an elastic bougie. *Lancet, Aug. 5, 1848, p. 146.*

[Dr. Egan makes the following remarks with reference to Dr. Mayne's statements :—]

As regards the curability of the disease, and the mode of treatment prescribed, the result of my experience is at variance with that of Dr. Mayne, having learned in our Lock Hospital, an institution by far the most extensive of the kind in the United Kingdom, that the most intractable form of disease the practitioner is called upon to treat is that under consideration; and even at the present day, I have no hesitation in declaring, that instances of permanent cure are by no means of such frequent occurrence as commonly represented. I am fully aware, however, that from the temporary cessation of the discharge, and subsidence of more urgent symptoms, the attendant is very generally induced to indulge sanguine hopes of ultimate recovery, and, in many cases, to pronounce a permanent restoration to health ; but should he at some future period have an opportunity of encountering his patient, and examining the condition of the uterus, he will find, too frequently, that the disease still lingers behind, the os remaining swollen and patulous, giving exit to a vitiated secretion, less abundant, perhaps, than formerly, and resembling more the peculiarities presented in leucorrhœal habits.

The local plan of treatment which I suggested as the most likely to prove efficacious, was the application of solid nitrate of silver to the sides of the vagina, and its introduction into the cavity of the uterus when diseased. To this "firing process," as he calls it, Dr. Mayne objects, and, in its stead, proposes an ointment of six or eight grains of nitrate of silver to an ounce of lard, which he states is more likely to extend its cauterising influence over the entire internal surface, and further obviates the possibility of the breaking of the caustic pencil, and its remaining in the uterus.

As to the effect of the solid caustic when brought in contact with the walls of the vagina, or applied to the exterior or interior of the uterus, it may be necessary to add, that so trifling is the pain or inconvenience attending it, that patients are constantly in the habit of walking distances to their homes, almost immediately after the operation, without exciting the slightest inflammatory symptoms; and as to the likelihood of untoward effects resulting in consequence of the breakage of the caustic, although such an occurrence may be possible, yet I think it highly improbable, in the hands of an experienced manipulator. I have not, I confess, exactly made trial of the ointment recommended by Dr. Mayne, but I have invariably found that greasy substances introduced into the vagina were never productive of advantage, and since no stringent objection has been urged against the use of the solid nitrate, I shall continue to employ it until I meet with a more desirable application, and one more calculated to effect a radical cure.

While Dr. Mayne agrees with me as to the inutility of the balsams, or cubebs, when administered internally, he strongly recommends the employment of copaibal injections, as most likely to correct the vitiated condition of the vaginal membrane, and further remarks, that he has found the disease obedient to the use of these, more than any other kind of injection usually employed. Impressed with the accuracy of the opinion promulgated by M. Ricord and others, that the action of these substances is purely of a local nature, I commenced, about three years ago, the employment of copaïbal injections, on a large scale, on the female patients in the hospital, and on two or three males whom at that time I happened to be treating for the same affection ; but after persevering for some months, both in hospital and private practice, I was obliged to relinquish their employment, never having been able to trace a single successful case as the result of that particular line of treatment. *Lancet*, *Sep.* 2, 1848, *p.* 261.

[DR. DE MERIC remarks that both Dr. Mayne and Dr. Egan have been anticipated by M. Ricord, in regard to the true pathology of gonorrhœa in the female ; Ricord having for some years expressed the opinion, that the disease not only extends to the uterus, but may travel along the fallopian tubes to the ovaries. As to the efficacy of copaibal injections, respecting which Drs. Mayne and Egan differ,]

M. Ricord, in his seventeenth Lecture (Lancet, December 11, 1847, p. 618), says, "Some people have thought that blennorrhagia might be cured by applying the balsam directly upon the affected mucous membrane, but this mode of administration *has never succeeded.*" This remark refers to blennorrhagia in the male; let us see what the same authority says regarding the other sex (Lancet, Feb. 5, 1848, p. 144). "Copaiba and cubebs taken internally are of no use here (vaginal blennorrhagia), the mode of action of these substances sufficiently accounts for this. M. Piorry has tried the injection of both drugs mixed with water, or other menstrua, but obtained *no satisfactory results.*" Now, if I may be allowed a few words more, I will conclude by mentioning a slight misapprehension into which both Dr. Mayne and Dr. Egan have fallen, when quoting M. Ricord's opinion as to the *mode of action* of copaiba.

The former gentleman, namely, states, "M. Ricord has established pretty clearly that the action of these substances is strictly local, &c.;" and the latter, "impressed with the accuracy of the opinion promulgated by M. Ricord and others, that the action of these substances is purely local, &c." Now it will be seen from the following quotation of M. Ricord's lectures, as published in the Lancet of December 11, 1847, p. 617, that although the action of copaiba *be local*, the substance must acquire new properties by the elaboration of the kidneys in order to cure by contact—"*direct anti-blennorrhagic action*. Copaiba, after being taken up by the torrent of the circulation, is elaborated in the kidneys, so as to acquire *new properties*. Thus it is that the urine of persons using copaiba has a peculiar smell, very easy of recognition for those who have had practise in these matters. This principle, *the result of the renal elaboration*, is contained in the urine, and it is by means of *this peculiar element* that the affected surfaces become modified." If this view of the action of copaiba be admitted, injections with this substance are of course out of the question.

Lancet, Sept. 16, 1848, *p.* 326.

122.—ON THE TREATMEMT OF SWELDED TESTICLE BY NARCOTICS.—By

T. C. Jackson, Esq., House Surgeon to the Royal Free Hospital.

[Mr. Jackson relates several cases in the practice of Mr. Gay; cases of gonorrhœal orchitis, some of the very acute with febrile symptoms. The treatment consisted in low diet, a purgative dose, and the administration of tincture of henbane in the dose of one drachm three times a day. The treatment was in all speedily successful. Mr. Jackson remarks,]

The above cases sufficiently illustrate an affection of the most painful nature and of very frequent occurrence amongst the class of persons continually presenting themselves for relief at the different hospitals, and which have been treated successfully with narcotics; a mode of treatment based upon the idea that the true pathological condition of the organ is one of great irritability of the seminal apparatus, and not partaking of the nature of inflammation in the strict sense of the term. Should the reader of these cases feel any interest in the matter, I beg to refer him to a paper on the subject by Mr. Gay, published in the Lancet, Vol. I., 1844, p. 602, where that gentleman has detailed at length his views concerning the origin, causes, and pathological condition and treatment of this affection, and who, since the publication of that paper, has treated great numbers of these cases with a success that sufficiently attests its value. We have considerable difficulty in laying aside our preconceived notions and practices emanating from the authority of our schools, and I admit, on first adopting this plan, I had considerable doubt of its power to relieve a condition usually deemed of sufficient importance to be attacked by antiphlogistic treatment of a severe kind, such as leeches, calomel and opium, antimony, &c.; but observation of a number of cases has convinced me that it is a plan that will usually yield satisfaction to the surgeon; and it is with a view of drawing attention to it that the above cases have been grouped together. Seldom do we find patients at the second visit complain of the tormenting sickening pain so commonly accompanying this disorder, and this prominent system being once subdued, the organ becomes quickly reduced to its normal size. There is an interesting fact with regard to the first case on the list, bearing upon the pathology of this affection. The report states, that the action of the aperient appeared to distress him, and add to the irritability of the patient, and no diminution had taken place in the pain. The henbane was increased in dose, and I remember well the statement of the man as to the decided relief he felt from its action. This case may also be taken as a good illustration, as it was considered urgent enough for admission into the wards. Singular relief is sometimes found from the action of a large dose of tincture of henbane (one or two drachms), preceded by an active purge, in cases of periodic mania. Are these periodic fits states of augmented irritability, and curable by the same means as irritation in other parts? The value of opium in the irritable condition of the system exhausted by hemorrhage or profuse discharge is well known. The principle being acknowledged, the explanation of the action of this remedy in the disease under consideration is easily shown. The morbid sensibility of the nerves of the testes is diminished by the action of the narcotic. The systemic asthenia being removed, the vascular apparatus recovers its tone, and resumes it proper balance, and that without the corresponding increase of urethral discharge which marks the resolution of the disease when brought about by the ordinary method of treatment. *Lancet, Sept.* 23, 1848, *p.* 338.

123.—ON THE TREATMENT OF GONORRHŒAL ORCHITIS.—By Benjamin Phillips, Esq., F.R.S., &c.

[In taking a review of the method of treatment usually employed in this disease, Mr. Phillips states that *punctures*, *frictions*, and *compressions*, are of limited application; *purgatives* are not of use except in moderation, to keep the bowels open; *local blood-letting* produces as much inconvenience as it does good; and *general bleeding* is usually uncalled for. The plan of treatment which Mr. Phillips prefers, is that by nauseants. He says,]

Our ordinary remedy is a nauseating mixture of tartar emetic and epsom salts; and provided nausea be well kept up for forty-eight hours, the testicle trouble is almost always brought under control. But I doubt whether, for out-patients, we can always get the practice followed out: I very much doubt whether, in a majority of cases, they will take a second dose of the medicine if they suffer much from the nauseating effects of a first. To insure the nauseating effects of the medicine—without which much benefit is not often observed—we generally begin with half a grain, and then continue the medicine in the dose of a fourth or a sixth of a grain every four or six hours; but it is always desirable so to arrange the doses during the first day as to unsettle the stomach; if this be not done, it is extraordinary the difficulty which is often experienced in obtaining the effect, so complete is the tolerance of the medicine which is often established. If properly employed, it does for the testicle in this affection what it does for the lung in the early stage of pneumonia. *Med. Gaz., June* 9, 1848, *p.* 975.

AFFECTIONS OF THE SKIN.

124.—ON THE ERUPTIVE DISEASES OF THE SCALP.—By Dr. J. M. NELIGAN, Physician to Jervis Street Hospital, Dublin, &c.

[Dr. Neligan divides the eruptive diseases of the scalp into inflammatory and non-inflammatory. The division indicates the principles which should guide our treatment: for the diseases of the first class will not bear stimulants at all during the early stage, and not freely even in their most chronic state. Dr. N. employs Willan's generic names, and uses but one specific appellation for each genus,—that of 'capitis.' He says]

The classification which I propose may be arranged as follows:

Eruptive Diseases of the Scalp.

INFLAMMATORY.—Herpes capitis; Eczema capitis; Impetigo capitis; Pityriasis capitis.

NON-INFLAMMATORY.—Porrigo capitis.

It will be seen that I exclude from this arrangement some diseases of the skin which are ordinarily described as occurring on the scalp. My reason for doing so is, that psoriasis, lepra, and ecthyma, the other eruptions which occur in this situation, are very rarely met with there, unless in connexion with their existence on the skin generally; and their presence on the scalp not requiring any special plan of treatment, they cannot be looked upon as diseases peculiar to this portion of the cuticular surface.

By a still further analysis of this class of skin diseases, we find that the two first-named belong to the order *vesicles*, the third to *pustules*, the fourth to *scaly diseases*, and the fifth to *vegetable growths*.

[*Herpes capitis*, the first form of which Dr. Neligan speaks, is the *contagious ringworm of the scalp*. It usually attacks children of from three to twelve years old. In its early stage it is not often seen, but it is then, Dr. N. states, of a decidedly vesicular character. He says,]

When seen, at its commencement, it presents the appearance of a small ring of minute vesicles, not more than an eighth of an inch in diameter, without any redness or other mark of inflammation beyond a slight tingling,—not itching. These vesicles are attended with scarcely any discharge, soon drying up and desquamating; but as they dry up in the centre, they spread from the circumference and the diseased spots, in the course of a few days, attain the size of a shilling.

If we examine them in this stage, we find that the centre, the part where the eruption first appeared, is thickened, elevated above the surface of the surrounding scalp, and covered with fine scales, which are renewed rapidly on being removed. As the disease proceeds, the patches extend from their periphery, still retaining a perfectly circular shape, and finally, after some weeks, attain the size of a crown-piece, which I have rarely seen them exceed, no matter how chronic the case may have been. Having attained this size, and ceased to spread, the entire of the diseased surface is thickened, elevated, and covered with fine, soft scales, which the least touch removes. Sometimes but one patch of herpes is found on the scalp, but more generally there are three, four, or more circles, distinct, and at some distance from each other: this, the advanced stage of the disease, is usually attended with much itching.

As the disease advances, the hair assumes a very peculiar appearance, almost pathognomonic of this form of eruption of the scalp. In the early stage each hair appears to be slightly bent on itself, and turned against the grain, obstinately refusing to lie smooth; the roots are also somewhat matted together by the scaly crusts of the eruption. After some time it presents a diseased appearance, being twisted, broken, of a whitish colour, and readily falling out; so that bald patches begin to appear, over which are scattered small bundles of the altered hair, which has been described, not inaptly, as resembling tow. This condition of the hair has induced some writers to describe this affection as a disease not of the scalp, but of the hair itself. Thus Mr. Erasmus Wilson, one of the most recent English authors on diseases of the skin, has named it *trichonosis furfuracea*.

The eruption does not in all cases assume the exact characters I have now described. In the early stage—when, however, it is rarely witnessed by the medical practitioner—its appearance always agrees with the description I have given, except that in some cases there is more inflammation than in others: but in the advanced stages it varies much, both as regards the amount of desquamation and the appearance of the elevated patches; it is this fact which has led to so much confusion in the diagnosis and nomenclature of the disease. Yet in the most chronic or complicated cases, the circular form of the eruption, and the peculiar condition of the hair, render its diagnosis easy to even the tolerably experienced eye.

Herpes capitis *is the true ring-worm of the scalp*.

[*Eczema capitis* is also a vesicular eruption, but is not contagious, and appears to arise from constitutional causes. In its various stages it presents so much variety as to render its diagnosis difficult: the watery exudation sometimes keeping the hair moist, sometimes drying into membranaceous scales, and at other times forming scabs, with fissures through which the inflamed surface is seen. Dr. Neligan tells us,]

The eruption of eczema on the scalp is preceded by heat, tingling, and itching, which are rapidly followed by the appearance of minute vesicles, crowded together in irregular-shaped patches, or scattered over a large surface. The inter-spaces between the vesicles and the whole of the scalp on which they are seated is red and inflamed; in most cases the vesicles are so minute as to be scarcely recognisable, or at least are not seen by the physician until they have burst and given exit to a copious exudation of a serous fluid by which the roots of the hair are accreted together. In the acute form of the disease this serous exudation continues for a long time, and is a most troublesome symptom; but in the chronic forms—and some cases assume a chronic character almost from the first—it rapidly dries into furfuraceous scales, which are pushed forwards by the hairs as they grow.

The vesicles of eczema usually first appear behind the ear, close to the edge of the hairy scalp, from whence the disease spreads rapidly, very generally attacking the ear itself; in some cases the entire of the scalp will be covered with the eruption in a week or ten days, but in others the disease spreads very slowly.

Impetigo capitis is a pustular disease; and the only one of this class which is met with on the scalp. Its occurrence in children is preceded, for a few days, by feverish symptoms, frequently attended with vomiting; the surface of the scalp is hot and painful, and the part about to be affected presents an erythematous blush. The eruption makes its appearance either in distinct pustules of a *psydracious* character, scattered over the head, or in groups thickly set on an inflamed base. In the former case each pustule is about the size of a small pea, both in circumference and elevation; and is attended with but little surrounding inflammation. On the second day of their appearance, each pustule contains thick yellow matter at the summit, but it is soon matured, when it bursts, and gives exit to the contained pus, which rapidly dries into a greenish-yellow scab. This form of impetigo—the impetigo sparsa of most writers—rarely assumes a chronic character, when it has lasted for any time its continuance being kept up by an eruption of fresh pustules on other parts of the scalp; but it most generally passes into the second form.

The second form of the disease is, as I have said, characterized by the eruption occurring in groups of pustules; but the individual pustules also are different in character, being of the variety which have been termed *achores*. Their appearance is attended with more decided symptoms of inflammation, both general and local, and the heat and itching is in many cases so severe that children tear the scalp and prevent the disease from presenting the truly pustular character of the first stage. The eruption usually commences on the forehead, involving at the same time some of the hairy scalp; the inflamed patches vary in size and form in different cases; in some extending in their longest measurement not more than from half an inch to one or two inches, while in others the greater part of the scalp is involved from the very commencement: in nearly every instance the skin bordering on the scalp is more or less engaged in the disease, and it often appears at the same time on the ears or on some part of the face. The pustules are not so large as when they occur singly; their coats are apparently thinner, and the pus which they contain is not so consistent, and is of a richer yellow colour. They usually become confluent before they burst, and the resulting greenish-yellow (when chronic, greenish-brown) scab is consequently much more extensive. When the eruption has continued for any length of time, large quantities of bright yellow pus are secreted beneath the greenish crusts, which separate in cracks to give exit to the matter, exhibiting beneath the highly inflamed raw surface of the scalp from which the pus is secreted.

In either form of impetigo, the hair is unaltered; it is usually matted together by the purulent secretion and the scabs, but it does not fall off or become changed in appearance even in the most chronic cases. Impetigo capitis is not a contagious disease; it is met with at all ages, but most generally in early infancy, lasting for several years if not properly treated; it very rarely appears for the first time after the age of nine or ten, but I have seen two instances in which the eruption occurred in advanced life: in both the disease was of the form first described. In the chronic stage of this eruption of the scalp small abscesses very frequently form at the nape of the neck, close to the roots of the hair; and some of the chain of lymphatic glands, which lies behind the sterno-mastoid muscle, become enlarged, swollen, and tender, but they very rarely suppurate.

Ptyriasis capitis is a squamous disease: though I have placed it amongst the inflammatory affections of the scalp, the inflammation with which it is attended is, from the first, of a chronic character; it would indeed seem to form an intermediate division between the inflammatory and non-inflammatory eruptions of this part of the dermis. Its appearance is not accompanied by any sign of constitutional or local disturbance, but soon after its eruption on the scalp it gives rise to much itching, without heat or redness of the surface. The disease consists in the secretion of numerous minute, papyraceous, dry scales, in most cases scattered over the entire of the head, without any sensible elevation of the surface, and perfectly free from moisture.

I cannot describe the precise manner in which this eruption originates, as I have never seen it until the squamous secretion was fully developed, there being no symptoms to direct the patient's attention to it until then. The presence of the scales produces much itching, compelling the individual affected to scratch the head, by which the scales are readily detached in large quantity, in the state of a fine powder or *dandriff*; their removal is rapidly succeeded by a further secretion. Ptyriasis is most commonly met with in infants at the breast, the frequency of its appearance decreasing with the advance of years towards puberty, at which age it is very rarely met with, but it again appears at the approach of old age. Of the four varieties now described, I have met with eczema the most frequently; next to it, impetigo; next, herpes; and ptyriasis the least frequently.

[The principles which according to Dr. Neligan must guide us in the treatment of this group of diseases, are, first, that they are inflammatory, and secondly, that they are constitutional affections. Stimulating applications, as before observed, are never to be employed in their treatment until they become very chronic. An important rule in treating all eruptive diseases of the scalp is never to shave the hair: it should be closely cut with a sharp pair of scissors, and kept closely cut so long as any trace of disease remains.]

"The local remedies," says Dr. Neligan, "which I am in the habit of employing are the carbonates of soda and potash, either made into an ointment with prepared lard, or in solution in distilled water or rose-water. I use them of various strengths, according to the form of the eruption, and the greater or less degree of attendant inflammation. The carbonate of potash, being of a somewhat more irritant character, is applicable only to those cases where the attendant inflammation is slight, as it generally is in ptyriasis, in many cases of herpes, and in the more chronic forms of eczema; but the carbonate of soda is best suited for impetigo in all its stages, and for the acute and recent cases of the other eruptions. The quantity of either of the carbonates in the ointment varies from twenty grains to half a drachm to the ounce of prepared lard. As it has an unpleasant odour, in private practice I usually add three or four minims of the oil of lemon or oil of bergamot, which addition also makes it keep better; where, however, the inflammation is very active, even this small quantity of an essential oil would render it too stimulant: in all cases I commence with the weaker preparation. The ointment is applied three times daily, being lightly smeared over the eruption; it is washed off with the corresponding alkaline lotion every morning, previous to the first application for the day. In very inveterate cases, where the head is covered with thick, hard scales, a light poultice of linseed-meal should be first applied for twelve hours, the scalp is then to be covered with a piece of old linen, on which the ointment is spread, and an oil-silk cap laid over the linen; this is left on for twelve hours more, when the scales are readily removable by washing the head with the carbonate of soda lotion. A clean surface is thus procured, on which the ointment acts more readily.

The alkaline lotions are prepared by dissolving from half a drachm to a drachm of the carbonate of soda or potash in a pint of rose water or distilled water. During the whole course of treatment the head is washed, at least once daily, with either of these lotions. They keep the scalp cleaner, and freer from scabs, than soap and water, which, however, I never permit to be used, as the irritant quality of soap tends much to retard the cure. In some cases, with which greasy applications disagree, but which we cannot ascertain except by trial, I use either of these lotions as the only external application; but then I order it to be applied five or six times daily.

In the chronic forms of any of this class of eruptions the application of a mild stimulant to the scalp becomes necessary, but more especially in cases of impetigo and eczema of long standing. The preparation which I have found most useful is a very dilute citrine ointment from half a drachm to a drachm of the officinal ointment to the ounce of prepared lard. This is applied only once daily, at bed-time, and washed off in the morning with the alkaline lotion, which is also used three or four times during the day.

[The constitutional treatment adopted by Dr. Neligan, consists in the administration of the yellow iodide of mercury with hydrarg. c. creta, and aromatic powder. Dr. N. says:]

To a child six years old I give half a grain of the yellow iodide of mercury, two grains of hydrargyrum cum creta, and two grains of aromatic powder, every second morning; for an older child I order the same quantity every morning; and for a younger child only every third or fourth morning. Should the child, however, be not more than three years old, I order half the quantity to be administered twice in a week; for infants at the breast, I omit the iodide of mercury, and give either the hydrargyrum cum creta or the hydrargyrum cum magnesia: the latter preparation I usually prefer, as it is a more certain mild purgative than the former. *In all cases I keep the child strictly on milk diet during the entire of the treatment.*

[*Porrigo capitis* is the only disease in Dr. Neligan's second division. He has fully verified its character as a vegetable growth. Though by the progress of the disease the whole of the scalp, the forehead, the neck, and even parts of the trunk, may become encased in a large yellow crust, yet in its early stage porrigo is very rarely noticed, since it does not give rise to either heat or itching. Dr. Neligan thus describes the disease :]

Porrigo capitis, *the true tinea or scald head*, is a rather infrequent disease, occurring at all ages, but most generally in childhood, from the age of 3 to 12; I have, however, seen one instance of it in an infant only eight weeks old. The appearance of this eruption is so peculiar, and so distinct from all the other eruptive diseases of the scalp, that it cannot possibly be mistaken for any of them.

It first appears in the form of small, yellow, dry spots, about the size of a pin's head, of a bright yellow colour, seated on the surface of the skin, which is depressed slightly by them; each spot is distinct, hemispherical, slightly concave, or cup-shaped, on its free surface, and convex beneath, where it is adherent to the skin. On removing the small, diseased mass, that portion of the scalp on which it was seated is found to be somewhat depressed, smooth, and shining. A single crust of the disease, or *favus*,—as it has been termed, from its honeycomb appearance,—is often traversed by one, and sometimes by two hairs, which appear to grow, as it were, from the very centre, or most depressed portion; this has given rise to the notion that the disease is one of the bulbs of the hair, but the fact of its appearance on other parts of the body which are quite free from hair is a sufficient refutation of this opinion. Porrigo capitis is a contagious disease, the vegetable being propagated by the *mycelia*.

[This disease is extremely obstinate and has been considered by some altogether incurable. But Dr. Neligan has found that it may be cured in a much shorter time than is generally believed. He says :]

The plan of treatment which I have found effectual in porrigo is both constitutional and local. The constitutional remedy which I use is the iodide of arsenic, a powerful alterative and an active remedy, but one which may be given with the greatest safety to the youngest child, its effects being, of course, duly watched. The dose of this preparation is, for an adult, from one-tenth to one-fourth of a grain, very gradually increased; for a child six years old, one-fifteenth of a grain; and for a younger child, from one-eighteenth to one-twentieth of a grain. It is best given to adults in the form of a pill, made with dry manna, and a little mucilage; to a child it is best administered in the form of powder, its minute division being perfected by means of a little white sugar or aromatic powder. When the system is saturated with this medicine, we usually find that some constitutional symptoms, such as acute headache, dryness of the throat, &c., are manifested; but in some cases I have given it in full doses for many weeks without any manifestation of its effects, further than those produced on the disease for which it was administered. When, however, it gives rise to the symptoms above mentioned, its use should be intermitted for some days, and an active purgative administered.

The following is an outline of the local treatment: the hair is to be cut, *not shaved*, as closely as possible, and a large linseed-meal poultice applied and kept on for twelve hours, so as to soften the crusts. As soon as the poultice is removed, the head is well washed with the stronger carbonate of potash lotion, and slightly brushed with a soft hair-brush or roll of lint; the scalp is then covered with the carbonate of potash ointment spread on lint, and over it a closely-fitting oil-silk cap is placed: the ointment is renewed twice daily. By the use of these applications the crusts of the eruption are generally completely removed in from two to three days. The carbonate of potash ointment is at the expiration of this time replaced by one containing the iodide of lead, in proportion of half a drachm of the iodide to an ounce of prepared lard; the head is to be still washed every morning with the carbonate of potash lotion. In some cases it will be found that the iodide of lead ointment excites a certain degree of inflammation of the surface of the scalp after it has been used for some days; when such occurs it should not be applied for a day or two, and the lotion alone employed three or four times daily. After this first attack of inflammation disappears, I have not seen it again recur, although the use of the ointment had been persisted in for months. The strength of this ointment should be increased after a fortnight; if the disease again appear, even to double that above indicated. I have only lately employed the oil-silk cap, but its use appears to be attended with the greatest benefit. The advantage derived from its employment is two-fold; in the first stage of treatment, by keeping the hard and firmly-planted crusts of the disease in a constant atmosphere of warm moisture, it softens, and thus renders them more easily removeable: and in the after-treatment the mucedinous vegetable being retained by it in the closest contact with the iodide of lead and the emanations arising therefrom, is more certainly destroyed, and its reproduction prevented.

After continuing this treatment for at least three weeks or a month, all external applications should be stopped, and the hair allowed to grow, so as to ascertain if the fungus will be reproduced; for it often lies dormant, and suddenly shoots forth, increasing rapidly when no longer subject to the action of the iodide of lead. Should it again return, the local applications must be had recourse to as before, immediately on its appearance. We should continue the administration of the iodide of arsenic until we are quite satisfied that the cure is complete.

The rational principles on which I think this plan of treating porrigo capitis proves successful, and which first led me to its adoption, are: "That it is a vegetable production, which grows and is reproduced on the cuticular surface of individuals whose system is in a peculiar cachectic state, and, consequently, that it is a constitutional affection." The object, then, is, to destroy the vitality of the fungus, and, by altering the nature of the soil on which it flourished, to prevent its reproduction. It is with the first view that I use the iodide of lead as a local application, and to fulfil the second indication that I administer internally the iodide of arsenic.

My reason for administering the iodide of arsenic internally, in preference to other alteratives, was, that I had seen it productive of the best effects in other cuticular diseases, in which the constitution was much engaged, especially in inveterate cases of psoriasis. I also found that it combined the effects of a tonic and alterative, the class of remedy indicated in this affection, and that its use, even when continued for a lengthened period, was unattended with danger. I restrict the patients to a purely milk diet, because, as I have already mentioned, when speaking of the inflammatory eruptions of the scalp, I found it useful in their successful treatment. *Dublin Quarterly Journal, Aug.*, 1848, *p.* 31.

126.—NEW CLASSIFICATION OF SKIN DISEASES.—By M. Baron.

M. Baron has just concluded, in the *Gazette Médicale*, an extensive inquiry touching the localization of skin diseases. He quotes the remarks of Biischet:—If the diseases of the skin could be strictly localized; if the seat of each cutaneous affection could be anatomically fixed; both practical medicine and pathological anatomy would be immensely benefitted;" and has endeavoured to work out this idea. His paper contains many valuable comments: his divisions of skin diseases are as follows:

1. *Diseases of the vascular apparatus.*—Roseola, measles, scarlatina, erythema, erysipelas, results of the application of a blister, pemphigus, nævus, and purpura. The principal symptom of all these is redness.

2. *Diseases of the papillæ.*—Urticaria, prurigo, hyperæsthesia, anæsthesia, and elephantiasis Græcorum. The principal character of these affections is a lesion of sensibility.

3. *Diseases of the sudoriferous apparatus.*—Abundant diaphoresis, eru tion of the sweating sickness, sudamina, milary eruptions, eruptions accompanying colliquative sweats, vesicular eruptions caused by irritating applications, and herpes. Most of these diseases are acute, and generally connected with a morbid state of the whole system. The most striking local symptom is the existence of isolated or grouped vesicles.

4. *Diseases of the apparatus secreting the epidermis.*—Ptyriasis, eczema, psoriasis, ichthyosis, corns, or warts. The common character of these affections consists in a modification of the epidermic secretion.

5. *Diseases of the chromatogenous apparatus.*—Lentigo, ephelides, both of the hepatic and melonotic description, vitiligo, and albinism. The principal feature here is an abnormal coloration of the skin, which arises neither from congestion of the vascular network, nor from an effusion of the blood; nor from the mixture with that fluid of any foreign substance which might give the skin or other tissues a particular tint; nor, lastly, from a decoloration of the blood; but from an alteration in the pigmentary secretion.

6. *Diseases of the sebaceous follicles.*—Acne disseminata, acne punctata, acne rosacea, melitagra? mentagra, impetigo sparsa, and lupus. The principal lesions to be found in these affections are pustules, and very rarely tubercles.

7. *Diseases of the piliferous bulbs.*—Lichen, favus, trichoma, alopecia, canities.

8. *Diseases of the matrix of nails.*—Onygon, exaggeration in the ungual secretion.

9. *Diseases of the fibro-cellular tissue.*—Ecthyma, rupia, varicella, variola, vaccinia, furunculus. These are inflammatory diseases, which rapidly run through their stages. They are all remarkable (except furunculus) for presenting a circular and flattened pustule, the central part of which is formed by the epidermis, raised either by pus or purulent serosity; and the circumference by a red margin produced by an elevation of the dermis.

10.—Diseases affecting the different elements of the skin at the same time.—Scabies.

11.—Frambœsia, molluscum, &c., are so little known, that the author did not think it necessary to determine their actual seat.

Lancet, July 8, 1848, *p*, 43.

126.—ON THE TREATMENT OF PRURIGO PUDENDI.—By G. Corfe, Esq.

Prurigo, where it attacks the pudendum or scrotum, is oftentimes more effectually soothed by a lotion composed of two or four drachms of the terchloride of carbon or chloric ether, in a pint of distilled or elder flower water, than any other application that I am acquainted with; at the same time a warm bath administered every evening affords a calm and refreshing night's rest. *Medical Times, Sept.* 9, 1848, *p.* 304.

127.—ON THE TREATMENT OF HERPES ZOSTERA.—By G. Corfe, Esq.

The most soothing application that I am acquainted with in this form of rash is the smearing the whole crop of vesicles with fresh made ungt. hydr. ammonio-chloridi twice or thrice a day. Again, I may remark that in all those forms of eruptive diseases attended with more or less exudation, whether they originate from impetigo, scabies, eczema, or porrigo, &c., it has appeared to my mind to be the most injudicious line of practice to administer alkalis, locally or generally, until we have ascertained the chemical character of the discharge itself; and I believe it will be almost invariably found that the discharge, on the scalp especially, has an alkaline re-agency upon test paper. The disease, therefore, should be treated upon more scientific principles than is done by many practitioners. If the exudation is alkaline in character, nitric acid lotion in the proportion of half a drachm to a pint of distilled water should be assiduously applied by means of clean cloths, or, if on the scalp, by the use of a common linen nightcap, and small doses of the same acid given internally, with some agreeable bitter, as the compound infusion of orange. The reverse of this treatment must be adopted where the discharge reddens litmus. I have witnessed very striking benefits to result from the use of an artificial Harrogate water, made by dissolving a drachm of fresh and good potassii sulphuretum in a pint of water, and applying it constantly to the ichorous surface.

Medical Times, Sept. 9, 1848, p. 304.

128.—ON THE TREATMENT OF SCABIES.—By G. Corfe, Esq.

[Mr. Corfe states that he rigorously pursues the following plan with a patient affected with itch:]

We provide him with old soiled linen and a worn out sheet; and each morning and evening he is ordered to make a good lather of yellow soap in his hands, and thus dip them wet into a basin of sifted or fine sand, and assiduously rub every part of the body on which the slightest trace of a vesicle exists. Having performed this ablution until the skin tingles smartly, he wipes himself dry, and then rubs the common ung. sulphuris firmly into the itchy parts. He is then enveloped in the winding sheet, and has a pair of old gloves on his hands, and he is left till night, when the same operation is pursued, and repeated daily until the fourth day, when he is ordered to indulge (and a great indulgence it is) in a warm bath, where he again lathers his body in plain soap and water, puts on fresh linen, and is provided with clean sheets, and the cure is from thence invariably effected. The vesicle of course is broken by the friction of the sand and soap; the acarus is exposed, and this ectozoon receives his death-blow by the inunction of the sulphur, which is oftentimes not accomplished by the mere application of sulphur ointment alone. The use of sand-soap balls is more elegant, though not more efficacious.

Medical Times, Sept. 9, 1848, p. 304.

129.—TREATMENT OF ECZEMA.—By M. Trousseau.

Professor Trousseau considers solution of bichloride of mercury as very useful in diseases of the skin generally, and especially in eczema. The dose is three grains in every pint of water; the seat of the eruption should be washed five or six times a day with this fluid, and an improvement is very speedily obtained. But the Professor states that even a more powerful treatment in these cases consists in the application of water as warm as it can be borne. At first the local irritation seems increased, but a reaction soon takes place, and the relief is proportioned to the degree of inconvenience at first experienced. *Medical Times, June 10, 1848, p. 89.*

130.—ON THE USE OF TAR IN CUTANEOUS DISEASES.—By J. Wetherfield, Esq.

[Mr. Wetherfield published, in 1845, an account of several intractable cases of skin disease which were cured by the use of *tar*, after arsenic and other favorite remedies had been tried in vain. As he still finds the remedy a valuable one, Mr. W. again calls the attention of the profession to the subject. He says:]

Tar was administered in these cases in capsules, each containing ten minims of simple Stockholm tar, and was first prescribed in this form by Dr. Sutro, of the German Hospital. This mode of administering the tar removes every objection on the score of taste to the use of this valuable remedy, which doubtless would still have enjoyed all the credit it obtained at the time its virtues were so much extolled in the works of Bishop Berkeley, but for its nauseous flavour in the then mode of administering, viz., tar water. Having tested the effect of tar in acne, eczema, impetigo, lepra, psoriasis, prurigo, and sycosis, I will add as briefly as possible one or more cases of each kind thus treated, and the results.

Acne.—Two obstinate cases of this disease, of several years' standing, were published in the report. The face, neck, and shoulders, were much covered and disfigured by the eruption, which had withstood all kinds of treatment. One capsule was given three times a day, and continued for three months. The disease entirely disappeared. Many cases have been subjected to the same mode of treatment since, with such decided good effect as to warrant the belief that tar is as much a specific in acne as sulphur in itch.

Eczema Impetiginodes and Eczema Capillitii.—Both diseases nearly the same in character, the former attacking adults, the latter children. Two cases of the former disease, one of eight years', another one year's duration. Both cases were treated by the internal use of the capsule, and externally the ung. picis. liquid, continued between two and three months, with perfect success. In one of these cases the disease extended over both upper and lower extremities, with patches over various parts of the trunk. The life of the patient was rendered miserable by this disease, which had resisted a great variety of remedies, including arsenic, baths of all kinds, &c.

Eczema capillitii is most common in young persons, beginning on the scalp behind the ears; from thence extending to the body and limbs. Several obstinate cases, of from five to seven years' duration, have been treated with the capsules of tar and ung. picis. liq. very successfully. In one case a bath of tar water was employed instead of the ung. picis., the child being but three years of age. Four ounces of tar, added to a sufficient quantity of water to cover the child's body and limbs, is the mode in which the tar bath may be made, and a very efficient remedy it is, free from the objection which might be raised against the ointment, of soiling the linen. This child took the capsules with perfect ease, and, together with the warm tar bath used every other night, recovered in five weeks. Cases of this disease often run a course of five or seven years, resisting every, even the most potent remedies.

Lepra.—A case of this disease came under treatment. The patient was covered with leprous patches. He took the capsules about a month, and the disease decidedly diminished. He was unsteady in conduct, and irregular in his habits, and did not pursue the plan so as to derive all the benefit he might have done. The odour of tar was perceptible in his clothes worn next the skin.

Psoriasis Palmaris et Nasi.—In this disease, in addition to the internal use of the capsules, which should be persevered with a considerable time, the hands should be immersed in a bath of tar water every night for a quarter of an hour, then dried, and powdered with starch powder. In a case of psoriasis nasi, the cracks which form at the junction of the mucous membrane and true skin should be anointed with ung. picis. liq. very slightly at bed-time, and washed off in the morning with warm water. In a case of this kind which annoyed the patient, who was a great snuff-taker, the disease was thus removed in a few days.

Prurigo Senilis.—Two cases in men, one of 85, the other of 90 years of age. These gentlemen were subject to attacks of prurigo, attended as usual with desperate itching and irritation. Various remedies had been employed in vain; lotions of hydrocyanic acid, hydr. bichlorid., &c., &c. The ung. picis. liq. was applied freely on the legs, and over it an elastic roller, occasionally bathing the legs in bran water, to remove the deposit of tar from the skin. Fresh applications were made in this manner every second or third day. This plan soon allayed the itching. Both patients suffered repeatedly from this disease, but always found relief from this mode of treatment, and were often quite free from it for months together.

Sycosis.—A case of this disease, which had resisted a multitude of remedies, amongst others carbonate of iron in large doses, sarsaparilla and lime water, arsenic, mercury, &c., was cured by the internal use of tar in capsules, taken one morning and evening, which removed not only the mealy eruption, but pimples, which were a source of great annoyance and much pain in shaving.

Tar acts as a diuretic and diaphoretic. The odour of tar is distinctly perceptible in the urine of those who take it in capsules. The quantity is somewhat increased, and it is rendered clear and free from all deposits. A physician who took it for acne, and who had studied the analysis of urine long and carefully, told me he had found it entirely remove a deposit of phosphates to which he had been long subject. Increased perspiration, and the strong odour of tar on the linen of those who have taken it, clearly prove its action on the skin. In moderate doses it improves the digestive organs, and invigorates the general health.

In the introductory chapter to Mr. Hunt's work, in adverting to the various remedies which have been employed by others in the treatment of cutaneous diseases, he alludes to that of tar, and speaks of it as humiliating to be tarred externally and internally. I cannot see the justice of this remark; none of my patients ever complained of the process, proper precautions being taken to protect the clothes, the odour of tar being infinitely preferable to that which often accompanies extensive eruptive disease. In a case of this kind, a dust-pan full of scales was swept from the floor where the patient had been dressed; this patient used facetiously to ask me, after I had applied the tar ointment nearly over him, whether I meant to feather him? So much benefit, however, was derived, that I believe this gentleman never regretted the employment of this application, as the skin was brought back to a healthy state, after eight or ten years of distress and suffering.

It is not intended by the foregoing account of the effects of tar to recommend it for all diseases of the skin, especially those complicated forms arising from syphilis; it may act, however, as an adjuvant even in some of these diseases. Neither is it advisable to administer this remedy during the inflammatory stage of many of the endless variations of skin complaints; it is decidedly more advantageous in the second or subacute stage of most cutaneous affections. Doubtless, as Mr. Hunt observes, bleeding and purgatives, with abstinence from stimulating food, is the treatment necessary in all those forms of cutaneous disease attended in the first stage with inflammatory action. Tar certainly deserves a trial in all chronic intractable and senile eruptions, where, owing to peculiar idiosyncrasy, arsenic cannot be administered; and from the experience I have had in the use of it, I do not hesitate to say it will be found highly beneficial.

Medical Gazette, June 30, 1848, *p.* 1110.

[Speaking upon this subject, Mr. Thos. Hunt states that he still retains his preference for arsenic, for the following reasons :]

1. As far as my experience has extended, it has, when regularly and properly administered, never yet failed in any of the diseases enumerated by your correspondent, provided the patient be free from organic disease, and temperate in his habits. And we have yet to learn whether, in any of the cases of reputed failure, the arsenic has been carefully administered in accordance with the conditions I have specified;—and this is an all-important point: for in a majority of my own successful cases arsenic *had*

failed, having previously been tried on an essentially different plan; and in many of them, tar had likewise failed.

2. Arsenic not only cures the disease, but, when continued for a certain time after the final disappearance of the disease, *always* in a great degree, and frequently *entirely*, destroys all tendency to the morbid action. This is not the case with tar. On Mr. Wetherfield's own showing, some of his patients were only relieved for the time, and "suffered repeatedly from the disease."

3. Although Mr. Wetherfield's patients appear to have made no complaints—to their honor be it spoken—yet the odour of tar, to say nothing of its trouble and filth, is to some persons intolerable; and to none can it be agreeable to reflect, that they carry it about with them into every company. Arsenic is not open to this objection.

4. Arsenic, besides being more certain and lasting in its effects, as well as less unpleasant, *is as safe as tar*. Of this I have abundant proofs in the history of many thousands of cases. Nor have I yet met with a patient who, from idiosyncrasy, could not bear it. I have explained in my book, that where the system was remarkably susceptible, and in a degree intolerant of the remedy, the disease was so much the more amenable to its influence, yielding speedily to such very minute doses as the patient could bear with impunity.

Nevertheless, if I should meet with a case in which arsenic cannot be borne in any dose, I will certainly give a trial to the tar.

I may perhaps be allowed to add, however, that it is our duty in every case, as it will prove our interest, as well as that of the patient, to try at once the most effective remedy we have at hand, especially if it be safe, and subjects the patient to no annoyance.

Medical Gazette, *July* 14, 1848, *p.* 81.

[In reply to one of the objections urged by Mr. Hunt against the use of tar in skin diseases, namely its disagreeable odour, Mr. Wetherfield observes that in many cases, such as lepra, acne, and sycosis, the external use of tar is not needed: while in such cases as eczema, which require the external application of the remedy, it is less offensive than the excretions to which the complaint gives rise. Mr. W. then relates a case of lepra recently treated by him. He says :]

In April last I was requested to see a patient living in Villiers street, Strand, and found the case to be one of well-marked lepra in the first stage, attended with much heat and irritation: the disease was nearly confined to the hands and arms, very little appearing on other parts. Purgative medicines and moderate diet were ordered, and continued from the 20th April until the 20th May, when the inflammatory action being subdued, the patient was ordered five minims liq. potassæ arsenitis ter die, with the food, which was continued till the 15th June. During this time the conjunctiva became inflamed, and dizziness of sight was present, proving the action of arsenic on the system; the eruptive disease in a slight degree diminished, but still the patches of lepra remained very distinct. At this time the health and strength became so reduced as to render it absolutely necessary to give up the liq. potassæ arsenitis, and to employ tonics and steel with ammonia, which in ten days enabled the patient to walk about during the day, which she could not do before. In the beginning of this month, I gave her the capsules of tar, which she was afraid to attempt to swallow in the first instance. The capsule has been taken with ease twice a day until the present time; the eruption has disappeared; the general health and strength greatly improved; she assured me a few days ago she had not enjoyed such good health for a long time. No external application of tar was made in this case, and during the first stage, so great was the irritation at certain hours of the day, that neither gruel, decoction of poppies, or any other of the usual soothing remedies, could be borne; dusting the part over with flour and starch-powder, seemed to answer best. This is only the second case of lepra treated with tar by me. I think it clearly proves the power of this remedy over the disease.

Medical Gazette, Aug. 4, 1848, *p.* 218.

131.—ON THE USE OF COLLODION IN SKIN DISEASES.—By Erasmus Wilson, Esq., F.R.S.

The diseases of the skin in which I have hitherto used the collodion with advantage are, chronic erythema of the face; intertrigo; chapped nipples and chapped hands; herpes labialis, preputialis, and herpes zoster; lichen agrius; lupus non exedens and exedens; acne vulgaris; and several affections of the sebiparous organs. In chronic erythema of the face, its contracting power was most usefully evinced, as it was also in lupus non exedens, and acne.

In a troublesome case of chapped hands and fingers, resulting from chronic lichen agrius, the collodion acted not merely as a protective covering, but also promoted the healing of the cracks more quickly than the remedies I have been in the habit of employing. In chapped nipples, it was even more efficient in its protective and curative action, and seemed, in the two instances in which I used it, to work a charm upon the painful skin. The gaping cracks were instantly drawn together and almost obliterated by the contracting power of the remedy, and were effectually shielded from the influence of moisture and the pressure of the gums of the infant, and all this, in consequence of the rapid evaporation of the ether, in an instant of time. In another point of view the remedy is invaluable as an application to chapped nipples—namely, as being in nowise injurious to the infant, from offering nothing which can be removed by the lips during the act of sucking, and in this particular, therefore, possessing a vast superiority over the various forms of ointments, astringent lotions, &c.

When properly applied, the collodion enters all the crevices of the lines of motion of the skin, and adheres so firmly as to require several washings for its removal. As it is usually prepared, it has the consistence of syrup, and in this state is best suited for those cases in which its adhesive properties are principally needed. Where, however, it is intended to be applied to the surface of an ulcer or abrasion, or to chaps of the skin, I find it convenient to dilute it with ether, and render it almost as limpid as water.

Lancet, Nov. 18, 1848, *p.* 553.

132.—USE OF CREASOTE IN ERYSIPELAS.

[It is stated that Dr. Fahnestock, of Pittsburgh, uses creasote in the treatment of erysipelas, with the best results.]

In every case of local erysipelas he immediately applies the purest creasote, with a camel's-hair brush, over the whole of the affected surface, extending it some distance beyond the inflamed part, and at the same time administering a dose of calomel followed by a sufficient portion of jalap to insure free catharsis. This, in the majority of cases, is all he finds necessary. But when the mucous membrane of the mouth and the fauces is also affected, he pencils those parts with a solution of the nitris argenti, say from half a drachm to a drachm in an ounce of distilled water.

In the phlegmonous form, it will be found necessary to repeat the application more frequently than in the simple, with the addition of a bread and water poultice, applied nearly cold, and well sprinkled with water strongly impregnated with the creasote, or a cloth, kept constantly wet with the solution, especially for the face.

The creasote when applied, should cause the parts to become white immediately; if this does not occur it is not pure. Thus, you will perceive, that success depends upon having the best quality of oil. It is worthy of remark, that the skin does not become in the least marked by the application, no matter how often it is applied.

Provincial Medical and Surgical Journal, Oct. 4, 1848, p. 555.

133.—ON PROTECTION FROM BURNS BY FIRE.—By —— Crompton, Esq.

Mr. Crompton, of Manchester, brought before the meeting of the Provincial Association, a discovery of Dr. Smith for rendering articles of clothing, &c., insusceptible of taking fire. He stated that all that was necessary was to immerse the article to be protected into a solution, the nature of which had not yet been made known to him. Specimens of lace, printed muslin, paper, hay, wood and other combustible materials so prepared, were exposed to the action of flame. They were severally charred, but neither took fire, nor was their texture destroyed. Specimens of the same articles which had not been immersed in the solution were at the same time submitted to comparative trial, taking fire readily. The appearance of the several articles was in nowise altered by the action of the solution.

Provincial Medical and Surgical Journal, Aug. 23, 1848, p. 478.

134.—CASES OF NÆVUS TREATED BY THE SETON, IN THE PRACTICE OF DR. BELLINGHAM.

[The first case reported is that of a child eleven months old, with two nævi on the face:—]

The larger nævus occupies the root of the nose and the inner angle of the left eye: it is about the size of the section of a walnut, is very prominent, the surface uneven, and of a purple violet color. On pressure it gives to the finger the sensation of squeezing a sponge, and shrinks and becomes pale. On removing the pressure, it very soon regains its former size and color; it becomes more prominent and of a deeper color when the child cries. The smaller nævus is seated on the forehead, has an oval shape, is very slightly elevated, is smooth on the surface, and of a pink color. The parent of the child states that at birth the larger nævus was about the size of half the nail of her little finger, had a pink color, and was not elevated, it has gradually increased in size, and of late this increase has been more rapid. The smaller nævus at the birth of the child was not larger than the head of a small pin, and resembled a flea-bite.

April 13th. A needle armed with silk, such as is used for the ligature of arteries, was passed through the base of the large nævus in four different places, and a double thread left in each, which were sufficiently long to be loosely tied and to permit of their being moved backwards and forwards.

15th. The child has been very quiet since the operation, feeds well, and its health does not seem to be at all affected; the tumour is evidently larger, and of a deeper color; the threads have been moved backwards and forwards.

16th. Suppuration is now established in the line of the setons, and a good deal of matter has escaped.

23rd. The tumour is slightly diminished, and healthy pus is discharged at the orifices of the setons; the child's health is very good.

27th. The tumour remains stationary; the setons are discharging freely. Three more double threads of silk were passed through the base of the tumour to-day.

May 11th. Some of the threads have been withdrawn inadvertently by the child's parents in removing the pus which had collected about the orifices, and some blood escaped at one point; two more threads were passed through the base of the tumour to-day, previously dipped in a ten-grain solution of nitrate of silver.

June 4th. But little of the tumour now remains; at one point in the centre where several ligatures met, there is some loss of substance. The patient was allowed to return home; she was seen a year afterwards, the disease was perfectly cured, and the cicatrix was scarcely perceptible.

[After relating another case in which the same treatment was successfully employed, the writer says,]

Velpeau describes three forms of nævus: one he terms the arterial; and a second the venous, as the arterial or the venous system predominates; to a third he gives the name mixed, the tissue appearing to be made up equally of both kinds of vessels. Dr. Marshall Hall classifies nævi according as they have their seat in the minute arteries, in the true capillaries, and in the minute veins. In this country they are usually distinguished into the cutaneous, the subcutaneous, and the pulsatile; to the latter the term aneurism by anastomosis is often given.

The *cutaneous nævus* is generally a mere superficial congenital mark, which remains during life, and never requires surgical interference; writers upon cutaneous diseases have, however, taken the trouble of inventing distinct names for some of the varieties, as the nævus araneus, nævus cerasus, &c., from their supposed resemblance to these well known objects.

The *subcutaneous form of nævus* in its very early stage has some resemblance to the former; it generally, however, soon begins to enlarge, becomes more prominent upon the surface, and acquires a deeper shade of color, and if seated upon the head or face, increases in size when the child cries; pressure diminishes its bulk, but on the removal of the pressure it quickly regains its former appearance; to the feel it is soft and doughy; if an incision be made in it, or if the surface ulcerates, it bleeds freely.

The *third form of nævus* differs from that last described in having a pulsation synchronous with that of the arteries, and is usually termed aneurism by anastomosis from this circumstance, though it differs from aneurism in every other respect.

Some difference of opinion exists among pathologists as to the nature of the structure of which nævi are composed, particularly the subcutaneous and the pulsatile forms. Dupuytren supposed it to be analogous to erectile tissue. Bell was of opinion that they were made up of a congeries of cells, into each of which an artery and vein opens. Other pathologists regard their structure as analogous to that of the placenta. A preparation in the museum of the Royal College of Surgeons in Ireland, illustrates their minute structure remarkably well, and shews that they consist of cellular tissue and of vessels, the latter being principally veins, of different sizes, exceedingly tortuous, dilated at some points and contracted at others, but arranged in no regular manner.

The subcutaneous and pulsatile forms of nævus, like the cutaneous, seem to be always congenital, though they may be so minute at birth as to escape observation. Their progress does not appear to be subject to any fixed laws; they will sometimes remain stationary for years, and then suddenly enlarge and extend; while sometimes, from the first, they increase gradually in size. They are often solitary, but in many instances more than one will be found, and while one remains quiescent the other will enlarge. The face and head appear to be their favourite site; when seated near a mucous canal they frequently extend into it, and they are often seen upon the inside of the lips and cheeks owing to this cause. In one of the foregoing cases the disease extended to the mucous membrane of the nostril, and caused considerable impediment to respiration.

In the foregoing cases, the treatment by seton was adopted. The advantages of this mode of treating nævus were first pointed out by Dr. Marshall Hall. This method of treatment is necessarily somewhat tedious, as it is requisite that the adhesive inflammation should be set up, and that a deposit of lymph should take place in the part. But to be successful, it only requires, in Dr. M. Hall's words, "to be done efficiently; to be repeated often enough; and to be followed by sufficient delay, for processes, necessarily slow to be established and completed."

Dublin Medical Press, Aug. 16, 1848, p. 97.

135.—TREATMENT OF ERECTILE TUMORS.

M. **Behrend**, of Berlin, treats these tumors by the application of the concentrated acetic acid, followed by lint dipped in distilled vinegar. Under this treatment the tissue becomes pale and hard, diminishes in bulk, and is at length completely thrown off. He also, in some cases, enjoins the repeated division of the dilated vessels, by puncturing them with a needle with double-cutting edges. *Dublin Medical Press, Aug. 16, 1848, p. 106.*

136.—ON THE CAUSES AND TREATMENT OF ULCERS OF THE LOWER EXTREMITY.—By George Critchett, Esq., Assistant Surgeon to the Leeds Hospital, &c.

[Impediment to the return of blood from the lower extremities is, it is well known, one of the most frequent causes of ulcers in those parts, as well as a serious barrier to their successful treatment. Mr. Critchett dwells at some length upon this subject: and after detailing the causes which lead to a dilated state of the veins, he observes, that from whatever cause this condition springs, it may terminate in five different ways:—]

First. It may produce hypertrophy of the coats of the veins, and thus resists further distension.

Secondly. The principal veins may become plugged up more or less completely with fibrine, and thus by diverting the current of blood into other channels, the disease may become stationary.

Thirdly. The capillaries of the skin and subcutaneous cellular tissue may become likewise dilated, giving rise to permanent discoloration of a large portion of the skin, and to thickening and firm fibrinous deposit beneath it, and thus the disease in the larger trunks would seem to be checked, if not arrested.

Fourthly. The larger veins may become more and more enlarged and elongated; the smaller trunks may become gradually implicated, until what I have denominated the spongy leg is produced; this condition sometimes relieves itself by hemorrhage.

Fifthly. In this spongy condition of leg a congeries of red vessels may form, in the centre of which a white patch appears on the skin, which is the immediate forerunner and indicator of ulceration, which being established is another way in which the congested veins are temporarily relieved.

[Mr. Critchett next refers to some of the other predisposing causes of ulcers, plethora, anæmia, scrofula, secondary syphilis, low fevers, and suppression of menses. He then proceeds to make a practical classification of ulcers.]

I propose, he says, in the first place to divide all ulcers into simple or local, and specific or constitutional. I again divide the simple or local into acute or spreading, subacute, chronic, healthy, irritable, and varicose; the specific or constitutional I arrange under the various heads of strumous, syphilitic, phagedænic, periosteal, menstrual, œdematous, and malignant. In considering the principles upon which the treatment of ulcers of the lower extremity is to be conducted, I must again remind you, "that the reason why ulcers are more frequently found in the lower extremity than in any other part of the body, and are more difficult to heal, and more liable to recur in this situation, is on account of the weight of the superincumbent column of blood weakening the vessels and impeding the circulation through the part.

The truth of this will, I imagine, be admitted by all surgeons, though it has not, I think, been sufficiently clearly and forcibly insisted upon by writers on this subject. If this be so, it follows as a necessary consequence, that the chief aim and object, independent of any specific treatment that the case may require, is to place the circulation of the lower limb on a par with the rest of the body: this object once accomplished, there is no reason why ulcers so situated should not heal as readily and as quickly as in any other part of body, and such is, indeed, found to be the fact.

[This may be accomplished by a sufficiently long continuance in the recumbent position: but this plan of treatment has its conveniences both to the surgeon and the patient.]

Is there, then, no other way besides rest in which the circulation in the lower extremity can be brought to a par with the rest of the body? I reply, with a confidence based upon personal extensive experience, and upon extensive observation of the same practice in other hands, that there is a plan more rapid, more certain, and far more lasting, and more applicable to a large majority of these cases, than rest; and that is, "uniform and complete support to the entire limb, which, I maintain, cannot be obtained by the ordinary bandage, however skilfully applied, but is only to be efficiently accomplished by a proper application of strapping, so as completely to envelope the limb from the toes to the knee."

Lancet, Oct. 7, 1848, *p.* 397.

[Mr. Critchett now refers to the plan of treatment commonly termed "Baynton's method." Though Mr. Baynton was the first to recommend the use of adhesive strips in the treatment of ulcers, yet the true exposition of the principles upon which alone they can be successively used, was given, Mr. Critchett says, by Mr. Scott in his work on diseased joints. The following, Mr. Critchett tells us is the proper mode of application.]

You take the centre of the first piece, and apply it low down to the back of the heel, and then, with the flat part of both hands, press the plaster along both sides of the foot. This plan is very preferable to taking hold of the ends, and endeavouring to apply them, as it insures a perfectly smooth adaptation of the plaster to the part, and also because it enables you to regulate the amount of tightness, which is a very important point. As you proceed with the remainder, you must always remember the principle is to make one portion hold on another; you must therefore alternate them round the foot and ankle. Your second piece should be placed in a similar manner underneath the heel, and then carried upwards, at a right angle to the last, so as to cover a portion of each malleolus. The third piece should be again applied to the back of the heel, overlapping the first by about one-third. The fourth piece under the foot, and carried upwards, each piece being pushed along, so as to allow it to take its own course; this must be continued until the foot and ankle are covered; the strips must then be carried in a similar manner up the leg, increasing in length as the calf increases, and extending as far as the knee, and in some cases even above this. A calico bandage, about three inches in width and eight yards in length, varying, however, according to the size of the limb, must now be applied, to keep the plaster in its place, and the limb is supported in the most complete and efficient manner that human ingenuity has yet devised. None but those who have practically tested the matter can estimate the immense difference between mechanical support so obtained, and the most accurate bandage that was ever applied; it is, in fact, far greater than mere reasoning upon the subject would lead you to expect; and while it accomplishes all that rest can do for the ulcer, in many cases it does a great deal more, enabling the patient to pursue his ordinary avocations, and at the same time healing the wound more rapidly, and far more lastingly, than the most complete rest would effect. In carrying out this method, we must remember that we have two objects to accmplish; the one is, to obtain a healthy circulation through the entire limb, and the other, to act upon the dilated capillaries immediately surrounding the wound. Both these objects are frequently accomplished by the general support I have just described; but it sometimes happens, particularly in small ulcers situated in the hollow between the malleolus and the os calcis, that the diseased vessels immediately around the wound require an amount of pressure which the rest of the limb would not bear. Under these circumstances very great advantage is derived from applying, previous to the support I have just described, some pieces of strapping, about six inches in length and two inches in width, in a crucial manner, over the wound, so as to extend a few inches above and below it; these pieces, as they do not encircle the limb, may be applied with all the force and tightness the sugeon can exert.

If this plan be superadded to the other in certain cases, it is of great assistance to the surgeon, enabling him to combine considerable local pressure upon the weakened and distended vessels immediately surrounding the sore, with gentle mechanical support to the entire limb. But it may be asked, is this complete support of the entire limb always neccssary? I answer, certainly not. When the limb is in an otherwise healthy state, the congestion confined to the circumference of the ulcer, and the ulcer is situated tolerably high up in the limb, short strips applied so as to cover a few inches above and below the wound, will answer every purpose, but it is of the utmost importance that these pieces should not surround the entire limb, for reasons that I have before insisted upon; and I would lay it down as a rule without exception, that in every case in which it is necessary to apply strapping entirely round a limb, it must never be partially applied, but must encompass and support every part of the leg.

Lancet, Oct. 14, 1848, *p.* 417.

[After describing what he terms the "acute" ulcer, which is to be treated not, of course, by pressure, but by soothing applications, such as poultices and water dressings—and then of the "subacute" ulcer, Mr. Critchett says,]

If the surface of the sore looks glassy and irritable, an improvement is often obtained by a weak solution of the nitrate of silver, or of nitric acid, or a light sprinkling of the red precipitate powder. After a certain time the sore presents a more defined edge, and a more healthy appearance; some granulations show themselves; the discharge becomes rather thicker, and the surrounding parts, instead of being a bright red, assume a much deeper shade; the pain, tenderness, and heat, are also much diminished. Your patient now naturally desires to be released from his confinement, and it is, I conceive, the duty of every surgeon not to keep a patient in the recumbent position a single day longer than is necessary for accomplishing a cure. Every consideration induces this conclusion; the patient's health improves under the influence of air and exercise; the daily avocations of life are no longer neglected; and a cure obtained under these circumstances, if not in all cases so speedy, is certainly far more likely to be permanent. Now, then, is the moment for commencing more effectual mechanical support by means of strapping; and most important it is to select the right time. If it be attempted too soon, it will bring back all the symptoms of acute inflammation, and if persevered in, may produce serious mischief; and the want of proper discrimination in the use of this, as of every other valuable remedy, may bring it into unmerited discredit.

When you first begin to strap a case of this kind, if the ulcer is situated high up in the leg, if the surrounding redness is not extensive, and if the general circulation through the limbs is tolerably healthy, the short strips, applied as I directed in my last lecture, and not allowed to surround more than half the circumference of the limb, will sometimes be sufficient. The entire foot and leg must then be enveloped in a bandage, which may be moistened over the sore with cold water. If, however, there is not a speedy and marked improvement in the aspect of the sore after two or three dressings, and yet the case is clearly one requiring mechanical support, you must at once apply strapping to the entire limb, in the way I have before recommended; and if this is done carefully, and with very gentle uniform pressure, a marked improvement will speedily follow. It has frequently happened, that in treating a case of this kind I have commenced with the short strips, hoping to save trouble and plaster; but I have afterwards been compelled to adopt the more complete method, and have found that I thereby in the end, saved both. Whenever the limb is swelled and puffy, the circulation through it feeble, and the parts surrounding the wound are extensively involved, as is shown by the discoloured and dilated condition of the capillary vessels, and by the subcutaneous deposit, the short strips alone are sure to fail, and the limb must be completely supported and enveloped in strapping—still continuing the cold water, if it afford relief. The indication is, in commencing strapping, to apply it very gently, and sometimes even loosely, for the very contact of the plaster, without any apparent circular tightness, appears to give very marked support to such a case. If all progresses favourably, you will find, when next your patient presents himself, that the strapping you applied has become still looser, owing to the swelling having diminished. The surrounding redness is now of a deeper shade, or even of a bluish colour, and the discharge is somewhat thicker. I should strongly recommend every surgeon to remove the dressings himself, as the state of the strapping and the nature of the discharge are valuable guides to him in determining the progress he is making, and the proper tightness with which to apply the next dressing; for this, as I have before said, is one of the most important elements in the success of this method of treatment. I may add, that I have found the feelings of the patient another most useful guide in determining this point. If the swelling is much diminished, and the colour of the surrounding capillary vessels of a deeper shade, and refill more slowly when emptied by pressure, you may venture to apply the strapping more tightly, and to discontinue the cold water, and you may then promise yourself a speedy and satisfactory cure. If, on the other hand, the pain has been increased by your application, the patient complains that it has felt tight and uneasy, and the discharge is thin, you must apply it again more loosely. If still there is no improvement, it is better at once to give it up, and to return to your soothing plan, and rest; either it has been used prematurely, or too tightly, and in either case it is useless to persevere. I have never met with an instance in which, if the first two or three dressings were not beneficial, it was possible to recover lost ground, and obtain a healthy action, without an entirely fresh start, after the limb has been brought into a favourable condition by rest and other suitable treatment.

I have now to consider the chronic form of ulcer, a condition in which it much more commonly comes before your notice, in consequence of the very inefficient methods of treatment usually adopted. In speaking of chronic ulcers, I shall at present confine myself to those that are simple and free from any decided constitutional peculiarity. They differ in a remarkable manner in the amount of pain they occasion; in some, the pain is aggravated by moving about, in others, by rest. Night is sometimes the period of the most severe suffering, particularly in those cases that are complicated with varicose veins; and again, I have met with some few cases of many years' standing in which the patient seemed scarcely to suffer. There is no heat; the surrounding parts are of a blue or of a brownish colour, this discolouration sometimes involving a considerable part of the leg; and it is a singular circumstance that this dark brown stain never disappears, even though the limb in other respects may have become perfectly healthy, this probably depends upon some permanent change in the capillaries of the skin. There is often a considerable amount of firm, inelastic thickening and deposit around the wound, varying in extent according to the length of time the disease has existed, giving to the sore an appearance of considerable depth; the sore itself presents a flat, even surface, without any signs of granulations, but covered by ill-formed lymph; the discharge is thin, varies in quantity, usually being slight.

Ulcers may exist in this condition for an almost indefinite period, varying slightly at times from accidental, local, or constitutional causes, but maintaining nearly the same size and appearance for many years. I have met with cases of this kind that, according to the patient's own account, have never varied materially for five-and-twenty years.

Lancet, Oct. 28, 1848, p. 469.

[Mr. Critchett next makes some remarks on the treatment of *chronic* ulcers. He observes that when the surface of the ulcer is foul and unhealthy, it is desirable to begin the treatment by a few days' rest, before proceeding to other measures. He says,]

In cases where rest can be thus obtained, and where the ulcer is indolent, and at the same time foul and unhealthy, the red precipitate powder is very useful in producing a new and more healthy surface; it should be sprinkled on rather thickly, and allowed to come off spontaneously in a congealed cake or mass; one application is usually sufficient. The principal objection to it is, that it often occasions severe pain for many hours. In making anything like an estimate of the facility, rapidity, and certainty of your success in curing these cases by the method I am about to detail, a most important element to be considered is the situation of the sore; if it be placed about the middle or above the middle of the leg, and the surrounding parts are of a bluish color, and not very readily emptied by pressure, all that is required is a tolerably tight, complete, and uniform application of strapping to the entire limb, and the sore will rapidly heal. In such a case a mere tyro will generally be successful; but if, as is very often the case, the ulcer is situated over either malleolus, or in the space between the malleolus and the heel, the mechanical management becomes far more difficult, and the cure more tedious, and, in inexperienced hands, often impossible. The great difficulty arises from the fact that the parts immediately surrounding the sore require a much greater amount of pressure than the rest of the limb will bear. In order to accomplish this, it is better to commence with the application of the short strips of plaster I have already described, putting the first piece some inches below the wound, and covering all that part that is discolored and indurated; these short strips should be drawn as tightly as it is possible to pull them: after this the limb must be completely supported, and in doing this, those strips which are applied over the foot and by the side of the ankle must be drawn tightly; but when you begin to encircle the small part of the leg it must be done with less force. The perfect power of thus moderating pressure in different parts of the limb, and also of forming a correct estimate of the amount of tightness each particular case requires, shows the master of this branch of mechanical surgery, and is only acquired after some considerable attention and practice. It is one of the very great advantages also that strapping possesses over any kind of bandage, in thus enabling you to modify the amount of tightness in different parts of the leg, whereas a bandage can only be applied with the same amount of force throughout; and practically it is found often to become loose where pressure is most needed, and to get tight around the small part of the leg, where it is injurious.

If, then, you carefully apply the strapping in the way I have directed, and regulate the tightness by the rules I have laid down, you will almost invariably find, when your patient again presents himself at the end of two or three days, that the strapping you applied tightly has become loose; this is not because it has in the slightest degree given way, but because the swelling and intercellular deposit has been to a certain extent removed by the effect of the pressure: this is a very favorable sign. The strapping must now be reapplied as tightly as before, and in two or three dressings, the wound will assume a healthy aspect, and the discharge will become thicker and more creamy. In cases where there is a considerable amount of thickening and induration, it often happens that the ulcer will not commence healing until all this has been removed by the pressure; it is necessary to renew the application more or less frequently, according to the size of the wound and the nature of the discharge. If the wound is large, it is better to dress it at first every day; whenever, also, the discharge continues thin, it is necessary to change it frequently, but as it gets thick, every third day is sufficient; and there is a class of cases sometimes met with in which the discharge is very thick and tenacious, and clings to the sponge, in which the wound heals rapidly, and the strapping may be allowed to remain on a week. I should say, as general rule, that twice a week is sufficiently often for the majority of cases. If you steadily pursue the plan I have now detailed, it matters not how considerable the deposit may be, nor how long the ulcer may have existed (I could almost say, from my own experience, the longer the better).

You will almost invariably succeed, not only in healing the sore, which is, after all, but half a cure, but also in getting rid of all thickening and enlargement, and restoring the limb to its natural shape, and the vessels to a comparatively healthy condition, bringing out the malleoli into "relief" as artists say, which may have long laid buried beneath a mass of morbid deposit.

[Local stimulants are not needed, Mr. Critchett thinks, in a simple chronic ulcer. If, however, the sore is irritable or indolent, he would use some such application, leaving the choice of the application to the discretion of the practioner and the feelings of the patient.]

Lancet, *Nov*. 18, 1848, *p*. 546.

197.—ON THE PREVENTION AND TREATMENT OF BEDSORES.—By Dr. M. C. BERNARD.

When the first blush of unhealthy inflammation makes its appearance (which is indicated by a livid colour in the integuments) we should take care that all pressure from the parts be immediately removed. This can be done either by the patient's position being changed, or by the aid of bolsters or air cushions; and if the case is one likely to be protracted, the hydrostatic bed of Arnott should be at once procured. The simple plan recommended by M. Purefoi (as lately described in the *Gazette Médicale*) is well worthy of the attention of the profession. He uses a cow's bladder, softened in warm water; this being oiled, and partially inflated, is placed under the part suffering from continued pressure. The effect of this support (in a case of fractured leg) exceeded his expectations. He says, "From the moment the patient experienced the change, he cried out that he was in heaven, and to the end of the cure of the fracture he felt no more pain, nor was the bladder changed but once during the month this was effecting. Another patient, who had gangrene from infiltration of urine, had to rest almost entirely on the sacrum for two months, and was saved any pain or ulcerations of the part by having placed under it a bladder, prepared as above, and wrapped in a towel." What renders this contrivance valuable is its simplicity and cheapness; it forms a very manageable substitute for the hydrostatic bed of Arnott, and will, I am convinced add more to the comfort of our patients than a more costly article.

In addition to these preventatives, others, to stimulate the surface and excite the dormant capillaries to more healthy action, should be diligently used. The lotion recommended by Sir B. Brodie is admirable for this purpose. It consists of two grains of bichloride of mercury to an ounce of proof spirit. These two contrivances, if used at the same time, will be found invaluable in the prevention of bedsores. The lotion of Sir B. Bodie, by its stimulating properties, will serve to thicken the cuticle, and render it more efficient to resist injury; whilst the inflated bladder of M. Purefoi, by its softness and elasticity, will preserve an uniform pressure on the surrounding parts, and allow the free circulation of blood through the capillaries at the surface of the body.

[If, in spite of our efforts, sloughing takes place, we may divide the progress of the case, for practical purposes, into three parts. The first is the period before the slough is detached, during which we must employ stimulating applications, as a carrot poultice morning and evening, sprinkled with a solution of chloride of soda. Pressure must also, of course, be prevented. In the second stage,]

When the slough falls out, a deep, unhealthy looking ulcer is presented to our notice, forming the second stage of these sores. This ulcer is generally round or oval. The integuments at the circumference are undermined, so that you can readily pass a spatula beneath them, showing that the subjacent cellular tissue had lost its vitality even to a greater extent than the cuticle. The margin of the ulcer is consequently found to overlap its base. The base presents a flabby, uneven surface without granulations, and interspersed with shreds of adherent slough. From this surface a thin sero-sanguineous or ichorous discharge is secreted, having a most fœtid odour. In order to promote healthy granulation, and stimulate the parts to cast off the remaining shreds of slough, warm dressings, consisting either of equal parts of gum elemi and spirits of turpentine, or of castor oil and Peruvian balsam, may be applied, dipped in lint, to the bottom of the ulcer, and a linseed meal poultice, spongio-piline, or a carrot poultice, placed over them. After a few days, the ulcer will assume a more florid appearance, and show a disposition to form granulations. It will now be necessary to make a change in the dressings. At this particular stage we will hear of many vaunted remedies and old woman's cures spoken of as specifics, consisting of ointments that take twenty days to make, lotions and poultices innumerable. Suffice it to say, that the simple means I have used at this stage have answered all my expectations, and have added more to my patient's comfort than all the greasy applications which are recommended for the same purpose. It consists in applying every morning with a camel's-hair brush a solution of nitrate of silver (ten grains to an ounce of distilled water) to the flabby granulations, then covering the surface of the ulcer, and filling it up with fine carded cotton. A piece of oiled silk, large enough to cover both hips and sacrum, should then be placed over the dressings. The oiled silk thus applied serves a double purpose; it will, by preventing the evaporation of the discharge, keep the cotton soft, and permit its easy removal at each dressing; it will also add to the cleanliness and comfort of our patient, by preventing the bedclothes being soiled. Under this simple treatment, the surface of the ulcer soon begins to assume a more healthy appearance, the granulations at the margin become amalgamated with those at the base, until the cavity is filled up by luxuriant granulations.

We have now the third stage of these bed-sores to treat. As in the second stage, our object was to stimulate the surface to healthy action, in this we have to control inordinate action, and repress luxuriant granulations. A concentrated solution of sulphate of copper (applied every morning) will be found most useful for this purpose. The carded cotton and oiled silk, as above recommended, may be also continued until the ulcer is perfectly healed.

Dublin Medical Press, May 10, 1848, *p.* 293.

138.—CASE OF OPERATION FOR A CONTRACTION FROM BURN.—By J. GRANTHAM, Esq., Crayford.

[In this case, in which there was entensive contraction of the integuments on the front and side of the neck, Mr. Grantham divided the cicatrix thoroughly. And afterwards,]

The treatment consisted in the application of folds of lint dipped into hot water, and secured by a roller passed round the throat, over the head, and under each axilla, at the same time securing a layer of wool wadding over the wound, so as to maintain a temperature of the wound equal to the temperature of the adjacent integuments. This dressing was continued, varied only occasionally with zinc ointment, for upwards of two years, a period no doubt seeming long to those who may not have experienced the great difficulty of healing such wounds as have the derma imperfect. As is my usual practice, where there is much purulent discharge, I endeavoured to support the patient on a milk diet, the utility of which practice has been attested in the cure of the most extensive burn ever published in the annals of surgery —in which case is also proved the necessity of maintaining an equilibrium of animal heat, with a firm and easy pressure on the granulating surfaces, believing, as I do, that these two principles are the chief essentials as external agents, in the healing process of wounds generally. I wish this remark to be understood as only applicable after the reaction of the part has taken place, and all dead portions removed by exfoliation. The treatment of this case is an example of the great advantage of maintaining equal pressure with equal temperature during the healing process.

Med. Gaz., June 9, 1848, *p.* 990.

139.—CASE OF CONTRACTION FROM BURN, CURED BY DIVISION OF THE CICATRICES.—By James Whitehead, Esq., Manchester.

[Mr. Whitehead brings forward this case as an example of the good effects (apparently permanent, for the case remains in a satisfactory state at the end of four years) of *careful division of the contractile tissue of the cicatrix.* The following are the circumstances:—A girl of eight years old was severely burnt by the ignition of her clothes, in the year 1830. In 1831, when the parts had been for some months cicatrized, it was found that]

The right fore-arm was immoveably contracted upon the arm to the degree of an acute angle, in which posture it was maintained by a web of cicatrix extending between the distal extremities of the two portions of the limb, and occupying, of course, the whole intermediate space. The corresponding limb was similarly fixed, the displacement being, however, less considerable. The skin of the neck was also deeply furrowed, and the head distorted.

[The cicatrices on the arms were removed, and the limbs maintained in the extended position on splints, with a thick cord tied round each elbow, and at the end of twenty-one weeks the cure was nearly completed. But at this time the use of the splints was relaxed, contrary to the injunctions of the surgeon, and the contractions returned to as great an extent as previously. In May, 1844, the patient, then twenty-two years of age, came again under the notice of Mr. Whitehead. At this time the head was dragged down to the right side, and the right arm rendered almost useless. Mr. Whitehead says,]

The fibrous band subtending the angle at the elbow-joint, was equal in thickness to, and tangibly as firm as, the tendo Achillis. The first operation was performed upon the neck, the incision commencing below the ear, the lower part of which organ was merged in the folds of the cicatrix; it was thence continued below the line of the jaw to a point opposite the middle of the chin. Division of the skin simply appeared to afford no relief whatever to the distortion, there being immediately beneath numbers of bands of a bright fibrous aspect, which effectually prevented the parts from resuming their natural position. These being successively divided with the bistoury upon a groved probe, and the head raised, other sets presented themselves to view, which, when extended, still produced a tractive effect upon the cicatrix below. Bundle after bundle was in turn dragged forward and divided, from one extremity of the wound to the other, until caution suggested a cessation. The wound which appeared dreadfully large, was cleansed and covered with simple dressing; it was quite healed in four weeks.

The relief afforded by the above operation encouraged confident hopes of a successful issue from a like procedure upon the arm; this was accordingly practised on the 8th of June, 1844. The bistoury was plunged through the structure at the angle of flexure, as close upon the joints as safety to the neighboring parts would admit, and thence carried forwards, emerging at the free edge. But this incision, which might, *a priori*, have been looked upon as all that was necessary, constituted comparatively but a small share of the operation. The divided parts immediately retracted considerably; but when extension was attempted, even but to a limited degree, a number of shining fibrous bands started forwards, completely hindering further movement. These were also divided and extension again attempted, when others of similar character were brought into view, occupying an elevated position in front of the joint, and opposing like resistance. In this manner successive groups of fibres had to be separated, layer after layer, before the limb could be brought into a straight line, which was not accomplished until all the deep-seated bands reaching across the joint on each side of the large vessels, and outwards towards the condyles, has been completely divided, including, of course, the fascial insertion of the biceps muscle. During the operation, the median basilic vein was accidentally wounded; this it was found necessary to ligature on each side of the puncture, before further steps could be taken.

The wound, which measured eight or nine inches in the long direction, and upwards of four inches transversely, was cleaned and covered with simple dressing and a bandage. A splint was applied to the back part of the limb on the fourth day, but this appeared unnecessary, as there was no difficulty in easily maintaining an extended position; the apparatus was altogether abandoned at the end of three weeks, and never afterwards required. The wound was completely cicatrized in six weeks. About three months afterwards I divided, in a similar manner, the cicatrices bounding the axilla, on the same side of the body, with nearly equal success.

The successful issue of the operation was undoubtedly attributable, mainly, to the *perfect* division of *all* the fascial fibres traversing the elbow-joint anteriorly from the arm to the fore-arm, or at least *all* that could be exposed with safety. It is not a little remarkable that the elbow-joint which had been almost totally unused for twelve years, appeared in no way injured, as no pain was complained of, nor difficulty experienced, in the attempts that were made to move it. The limb is now plump and well shaped, and apparently as strong and useful as though it had not been materially injured. *Prov. Med. and Surg. Jour., Aug.* 9, 1848, *p.* 431.

AFFECTIONS OF THE EYE AND EAR.

140.—A NEW MODE OF TREATING CERTAIN CASES OF DEAFNESS.—By J. YEARSLEY, Esq., Surgeon to the Metropolitan Ear Institution.

[Mr. Yearsley observes that hitherto there has been no successful mode of treating the deafness arising from perforation of the membrana tympani. The process of syringing out pus or mucus from the tympanal cavity, by passing air through the perforation by way of the Eustachian tube, will often indeed produce a temporary improvement; but in many cases it is of little or no service. Mr. Y. makes known, however, the following simple method of treating these cases. He says,—]

In 1841, a gentleman came from New York, to consult me under the following circumstances:—He had been deaf from an early age, and on examination, I found great disorganization of the drum of each ear. On my remarking this to him, he replied, "How is it, then, that, by the most simple means, I can produce on the left side a degree of hearing quite sufficient for all ordinary purposes; in fact, so satisfied am I with the improved hearing which I can myself produce, that I only desire your assistance on behalf of the other ear." Struck by his remark, I again made a careful examination of each ear, and observing their respective conditions, I begged him to show me what he did to that ear, which I should unhesitatingly have pronounced beyond the reach of remedial art. I was at once initiated into the mystery, which consisted of the insertion of a spill of paper, previously moistened at its extremity with saliva, which he introduced to the bottom of the meatus, the effect of which, he said, was "to open the ear to a great increase of hearing." This improvement would sometimes continue an hour, a day, or even a week, without requiring a repetition of the manipulation. Such an interesting fact could not fail to excite my attention, and it naturally occurred to me to try so simple a method in other cases. I did so in several which appeared to me to be identical with that of my patient, but I invariably failed. I was on the point of abandoning the idea that the remedy could ever be made available in practice, and of considering either that my American patient's case was unlike all others, or that it depended on some idiosyncrasy, when it happened that a young lady came under my care, by the recommendation of Mr. Squibb, surgeon, of Orchard-street. She was the daughter of wealthy parents, whose anxiety for her relief was so great as to induce them to bring her to me long after I had discouraged their visits, and openly expressed my inability to relieve her. She had become deaf at a very early age, after scarlatina, which had produced disorganization of the drum of each ear, and the deafness was extreme. Unwilling, however, to abandon hope, her friends continued to bring her to me, in order, as they said, that "nothing might be left untried." With little expectation of success, after so many previous failures, I was induced to apply the new remedy, with some modifications upon my previous experiments. Instead of adopting my American patient's plan, it occurred to me to try the effect of a small pellet of moistened cotton wool, gently inserted and applied at the bottom of the meatus, so as to come in contact with the small portion of membrane which still remained. The result was astoundingly successful. On the evening of a day in which she had risen from her bed with the sad reflection that she must be for ever debarred from social converse and enjoyment, she joined the family dinner-party, and heard the conversation which was going on round her with a facility that appeared to all present quite miraculous. Day after day, the remedy was applied with the same marked success, and eventually she learned the art of applying it herself, and thus became independent of me. It was observed that, until the wool could be brought in contact with a particular spot at the bottom of the meatus, the hearing was not at all benefited, on the contrary, was prejudiced; but the moment it was properly adjusted on that particular spot, the hearing was restored. Subsequent experience, in a vast number of cases, confirms this remarkable fact. It is not merely necessary to insert moistened cotton wool to the bottom of the meatus. Such a manipulation would in most cases add to the deafness. It is essential to find the spot on which to place the wool, and so adjust it as to produce the best degree of hearing of which the case may happen to be susceptible. This of course differs according to the variety and extent of the disorganization.

I quote the above case, not only because it was the first which it was my happiness to relieve by this novel plan, but because I am in a position to show the permanency of the remedy; for recently I have made it my business to write to the mother of the young lady, who states that her daughter "continues to derive the same benefit as ever from the remedy, and that in her case it has been most successful, restoring her to the charms of society, from which she had been almost entirely excluded. It is now scarcely necessary for the members of her family to raise their voices when addressing her." She adds: "When the aid is removed she scarcely hears at all."

For nearly five years this young lady has used the remedy with undiminished success, and during the same period I have been availing myself of it in the ordinary routine of my practice, stepping neither to the right nor to the left to seek for cases in which it would be applicable, nor ever speaking of its extraordinary success out of the circle of my immediate medical acquaintance. And most probably I should have continued so to do, if it had not happened that a gentleman, an army surgeon, recently consulted me, who having experienced the most happy result from the same mode of treatment, thought proper to publish some account of it in a local newspaper, considering, as he stated, that so important a mode of treatment ought to be more extensively known.

Mr. Griffiths, of Pantgwyn, Newcastle, Emlyn, Carmarthenshire, the gentlemen in question (I am at liberty to use his name), did me the honor to call on me in September of last year, accompanied by Sir David Davies, to consult me about a young friend laboring under an affection of the throat. During the consultation it was necessary for me to raise my voice very considerably to make myself heard by Mr. Griffiths, and I observed that when he blew his nose, he distinctly passed air through the tympanum. After the consultation, I alluded to his deafness, and the probability, that by a new remedy I could afford him some relief, more especially as he had unconsciously revealed to me, in blowing his nose, a state of ear favorable for success. He readily assented to a trial; and I must be permitted to quote his own statement of the result. On the remedy being applied, he says—"To my utter astonishment I heard every sound so loud, that I felt I had never known what it was to hear until that moment. Sir David Davies could hardly have believed it had he not been present. On entering the streets, the noise was so intense, that I was compelled to stop up my ears to deaden the sound; but after a time I became accustomed to it, and can now enjoy the pleasures of social converse without straining my auricular organs, or being obliged to be addressed in a considerable elevation of voice. Personally I continue to apply the remedy with the same beneficial effect, and am convinced of its permanent nature, when persevered in, and properly attended to. This extraordinary discovery comes too late to be of that essential service it would have been to me in earlier life, yet it may render the rest of my days more comfortable in my intercourse with the world."

The following brief history of Mr. Griffiths' case, as detailed by himself, is interesting in many points of view:—"The crisis of a severe attack of scarlatina in my infancy was attended by abscesses in both ears, which produced deafness, and a continual discharge of purulent matter, more or less, until I attained my twenty-second year, when the latter ceased. Occasionally concretions of wax formed in the passage, increasing the deafness. These were removed by syringing, after which a thin pellucid fluid would issue from the ears, during which my hearing was much improved, again becoming worse as the discharge ceased. While the discharge lasted, I experienced a slight tenderness in my ears, which also ceased with the discharge. I find that your remedy sometimes does the same thing, and that is my reason for not constantly using it: but if it is not applied my hearing is not in the least degree remedied! The discharge is always more profuse when in bed, even without the remedy, and I am somewhat puzzled to account for it. My children know as well as I do when the remedy is applied; and when it is, they remark, 'Your ears are too sharp; we cannot now speak to mamma, even in a whisper;' but they cannot, more than other people, discover why I should hear so well one day, and the next, perhaps, not better than usual; and the question now is, 'Have you got your new ears on to-day, papa?' The invention is invaluable."

From this communication, written three or four weeks after his visit to town, it appears that the remedy at first set up an irritation in the ear, which occasionally rendered it advisable that it should be discontinued; but now I am enabled to state that such obstacle to its use no longer exists, and that he applies it regularly, uninterruptedly, and with undiminished success.

This case, like the first quoted, proved to be one in which there was a loss of a great portion of the membrana tympani; and I may here observe, that all my experience tends to show that this is an essential condition of the ear for success. At the present time I can refer to not very far short of two hundred cases, in which the new treatment has been successful, and in all of which more or less perforation or destruction of the membrane exists.

A very small quantity of wool is sufficient. It must be moistened in some fluid without any compression, and gently pushed down the meatus with the point of a probe. I have had constructed for the purpose a set of instruments, which are calculated to meet and overcome every difficulty; for I need scarcely say that it is very easy to talk of passing a foreign body down the meatus, but it is not so easily done. Besides, it is not sufficient to merely pass it down to the site of the membrane; but when there, the spot must be found which it is indispensable the wool should occupy and cover; for then only, and not till then, will success attend the application, and the patient regain the hearing.

With a few rules, which, of course, vary with the case, the patient may be taught to manipulate upon himself, and all that is required is to remove the dry wool, and replace it with moist, night and morning, or morning only. This is quite sufficient to maintain the improved hearing in the intervals.

It will be expected that I should say something of the modus operandi of this new application; but I can offer nothing that is conclusive. It has appeared to me in some way or other to supply the place of the lost membrane. The moisture is absolutely necessary to its perfect action; for when the wool becomes perfectly dry it impedes rather than improves the power of hearing. Is it possible that moist wool placed at the extremity of the meatus can transmit the vibrations of sound in the same manner as the natural membrane, or must we look for some other explanation? However, of its relieving this kind of deafness there can be no doubt.

Lancet, July 1, 1848, *p.* 10.

[Perforation of the membrana tympani, Mr. Yearsley observes, may be congenital, or it may arise from various causes; as from accumulation of matter in the tympanal cavity, from tympanitis, or from an extension of disease from the meatus; and may be caused also by accident, as by blows on the ear, or loud noises. He then goes on to say,]

With regard to the interesting question which has been so much debated —Can loss of the membrane be repaired? and to which the negative has commonly been given, one important distinction must be made as a preliminary to its consideration. We must distinguish between those cases in which from accidental causes, or the pressure of matter, the membrane has been merely perforated without loss of substance, and others in which from ulceration, the greater part of the membrane has been entirely destroyed.

In the first class of cases, I have no hesitation in declaring that nothing is more common than for the membrana tympani to cicatrize. Numbers of persons suffer in their childhood from suppuration in the tympanal cavity and the exit of matter through the membrane, in which in after-life no solution of continuity whatever can be discovered by the most searching examination, but in which there are evidences of cicatrization. In the accidental forms of the affection, the drum frequently closes up perfectly within a few days after its perforation. Some years ago, I was induced to perform numerous operations upon the membrane when in a thickened and semi-cartilaginous state, in which puncturation appeared to offer the only means of procuring relief to the hearing. And in cases where I thus operated, the great difficulty was to keep the membrane open, which, in point of fact, was insuperable. I have performed the operation repeatedly in the same case, in which relief was afforded after each operation, but after a while the wound would cicatrize in spite of all means I could devise to prevent it. One of the last cases thus operated on (for I have long discontinued this operation, as a remedy, *per se*, not to be depended upon) was a lady brought to me by Dr. Richards of Bedford-square, in which decided relief was afforded to the patient so long only as the opening could be maintained. In these cases it has not been a mere obstruction of the meatus or the tympanum, but an actual cicatrization of the membrane.

It was thought by Sir Astley Cooper, that loss of the membrana tympani was of little consequence to the hearing, he having seen many cases with loss of membrane, and little perceptible deafness, and many of his patients hearing well after he had performed perforation of the membrane of the drum. Other writers have followed this eminent surgeon in this opinion, while others, and particularly Kramer, have as violently opposed it, and maintained that perforation was invariably followed by a greater or less amount of deafness, according to the extent of the loss of membrane. Itard held the same opinion as Sir Astley Cooper. I believe a modified view must be taken of the question. My own opinion is that simple loss of the membrane itself never entails severe deafness; but yet, when taken alone, it often produces a marked diminution of hearing; and sometimes, in consequence of the exposure of the mucous membrane of the tympanum and membrana fenestræ, these structures become diseased to an extent which together with the loss of membrane, produces extreme deafness.—The middle ear cannot be exposed to the air for any length of time without such a result being produced.

There is some difficulty in judging of the influence of the membrana tympani on the hearing; but there can be doubt that hearing is more acute when it is removed altogether than when it is thickened and diseased. Its importance has often been calculated from the amount of hearing regained, when the membrane has been punctured under the latter circumstances.—This is evidently a fallacious estimate. As Kramer truly remarks, those with loss of membrane may obtain sufficient acuteness for ordinary conversational purposes; but it is by no means equal to the appreciation of the delicate pulsations of sound perceptible by the organ in a state of integrity.

Lancet, July 15, 1848, p. 65.

[Mr. Yearsley next makes the following remarks on internal otorrhœa :]

Internal otorrhœa may appear as the sequela of either acute or chronic inflammation of the mucous membrane of the tympanum. The seat of the discharge is generally the mucous lining of the tympanum, but occasionally it is produced by the deeper-seated structures of the ear, or the ear may be merely the channel by which matter ecapes from the brain or spinal cord, and it has been known to come from the parotid gland, or the muscles of the vicinity of the ear. In the great majority of cases the discharge escapes by way of the external meatus, but it sometimes passes from the ear through the Eustachian tube into the pharynx, or by ulcertion through the mastoid process.

The term otorrhœa is generally limited to discharges by way of the external meatus; but there seems to me to be no valid reason against applying it to all discharges having their origin in the ear itself, whatever may be the channel through which they may obtain their exit. This difficulty, if any, is, however, lessened by the fact, that though discharges may, in the first instance, make their way through the Eustachian tubes or the mastoid bones, these channels rarely, if ever continue, the membrana tympani becoming affected, and the discharge then establishing itself through the external meatus. Respecting the nature of otorrhœal discharges, I consider that no definite classifications of disease can be drawn from the different kinds of matter which escape from the ear, neither do I approve of the division into mucous and purulent otorrhoœa which has been commonly made.

Almost all cases of otorrhœa supervening on acute inflammation, are at first purulent, but as they proceed and acquire a chronic character, the discharge generally becomes muciform, and sometimes appears to consist of pure mucus. On the other hand, otorrhœa, which attends chronic inflammation, and which comes on very gradually, is almost always of a mucous or muco-purulent kind at first; but if its progress be watched, it will be found that as it goes on the matter becomes puriform. These changes from one kind of discharge to another are so constant, that no arbitrary division of otorrhœa can be fairly made. When we see a case for the first time, and find it discharging either pure pus, or mucus, or a thin serous fluid, we cannot adopt a separate mode of treatment to the different states, for a few days after the nature of the discharge may be entirely reversed, either from external causes, or the state of the patient's health. In all ordinary cases, the discharge is secreted from the mucous membrane of the tympanum, or the degenerated cuticular lining of the meatus, in the same manner as any other discharge from a mucous surface—bronchorrhœa, or bronchitis, for example. There is not necessarily nor even generally, any ulceration of the secreting surface. These conditions explain the variable nature of the discharge, it being well known that the mucous membranes may, without solution of their continuity, secrete every variety of matter, from pus to ordinary mucus.

The state of the membrana tympani and of the ossicula is always a matter of importance in ear-discharges. Kramer thought that the membrana tympani never ulcerated, unless from independent diseases of the membrane itself; but to me this opinion is very questionable.' In a great many cases the perforation of the tympanum simply results from the presence of pus, or some other accumulation of matter, in the cavity of the drum, just as perforation of the skin attends the presence of pus or any foreign body beneath the cutaneous tissues. In otorrhœa we mav find the tympanum either perforated or entirely destroyed by the same amount of internal disease. As I have already stated, the membrane, according to my experience, may cicatrize when even large portions have ulcerated. The state of the membrane necessarily exerts considerable influence over the ossicula, as, when wholly destroyed, they lose the support derived from the attachment of the handle of the malleus. Hence they are more likely, during the progress of the otorrhœa, to become loosened from each other, and discharged through the external meatus. The whole of the membrana tympani may disappear, and the malleus and incus become dislocated from the membrane and from the stapes, and in some cases no greater deterioration of hearing occurs than in simple otorrhœa; but the loss of the stapes, from its connexion with the labyrinth, is of the gravest importance in regard to the sense of hearing, producing, in fact, total deafness to all sounds not in immediate contact with the solid parts of the head. This point—namely, that hearing may remain while the stapes continues in *in situ*—illustrates a delicate question in the physiology of the human ear. It has been matter of doubt, whether the membrane of the fenestra rotunda is intended for the propagation of sound to the auditory nerve, or to receive the counter-stroke of the wave of sound after it has passed to the labyrinth by way of the ossicula and the membrana fenestræ ovalis. If the membrana fenestræ rotunda were not capable of receiving and transmitting sonorous vibrations from without to the labyrinth, there could be no hearing, when the stapes remains fixed to the oval fenestra without any attachment externally, it being a law in acoustics, that aeriform vibrations cannot be communicated, When, therefore, disease has not produced such a condition of the ear, artificial perforation, or trephining of the membrane presents itself to our notice as the means by which such a result may be attained.

[This operation of performing the tympanum may be performed, Mr. Yearsley thinks, with a fair prospect of benefit under the following circumstances, and when no other mode of proceeding affords any hope of relief:]

1. When there is induration and thickening of the membrana tympani to such an extent as to cause deafness, but when there is no disease of any other part of the auditory organ. 2. When there is stricture, occlusion, or obstruction of the Eustachian tube, irremediable by catheterism, and no disease of the cavitas tympani, except simple obstruction, the other parts of the ear remaining healthy. 3. In cases of extravasated blood in the tympanum, which cannot be removed by way of the Eustachian tube, either from its stricture, occlusion, or some other cause. In addition to these points, it must be noticed that, even in the best cases, the assistance is only the removal of a mechanical obstruction. The membrana tympani is an adjuvant to hearing, but unless the nerve of audition remain tolerably healthy, no alteration in the state of that membrane will be of any avail. The membrane, only aiding in the transmission of aeriform vibrations, its induration, or insensibility, in nowise interferes with the sonorous vibration of solid bodies in contact with the side of the head, so that the removal of impediment in the membrane is of no service, unless the patient can, before the operation, distinctly or tolerably hear a watch when held between the teeth, or applied by contact to the ear. This is of paramount importance, and was insisted on by Sir Astley Cooper, though little attended to by subsequent writers.

In my own practice, an additional indication for the performance of the operation, as far as I am aware not known to other aural practitioners, but equal in importance to any of those previously pointed out, has been satisfactorily proved. This is, in those cases where there has been accumulation of pus in the middle ear, from inflammation of the tympanum and rupture of the membrane, to allow the exit of matter, but in which the membrane has subsequently cicatrized. The cicatrization of the membrane, by increasing its tension, and altering its structure, invariably produces more or less deafness.

In such cases, it often happens that no other injury to the ear has been left by the disease, which is most common in children or young persons, and in which the membane of the tympanum cicatrices in a few days after the eruption of the matter. In other cases, the membrane only closes after the long persistence in internal otorrhœa. Here there is not the same chance of relief, because the disease may have affected the fenestral membranes, so as to render them insensible to sound. in which case neither the removal nor restoration of the membrana tympani would prove of any avail.

Careful examination of the ear in such cases will often reveal no sign of a cicatrix, nor any indication whatever of a diseased state of the tympanum. We must get our diagnosis from the previous history of the case. If the patient has ever had inflammatory disease of the ear, followed by discharge, in which deafness appeared as the discharge ceased, the diagnosis is almost complete, as external otorrhœa does not produce deafness without some objective signs of disease of the membrane. In fact, if in such cases a watch can be heard distinctly when in contact with the auricle, or with the teeth, we become quite certain of the cause of deafness, with the single exception of the possibility of disease of the fenestral membranes. Other cases of the same kind are sometimes produced by accidental rupture of the membrane, followed by cicatrization and loss of hearing.

We may sum up, then, by saying, that in cases of deafness from obliteration or irremediable obstruction of the Eustachian tube, either with or without extravasation of blood in the tympana; in cases of excessive induration and hypertrophy of the membrane; and in cases in which it is the relation of cases confirmatory of the happy effects of the cotton-wool, it will be unnecessary to describe with minuteness the precise appearances which each ear presented in which it has been successful; it is sufficient to say that in every case there was partial or entire loss of the membrana tympani, with more or less otorrhœa, though it is not a *sine qua non* that the latter symptom of disease should be present. A perfectly dry ear, with perforation of the membrane, may be always considered a highly favourable case for the operation.

The only question we have, therefore, to consider is, how far it is possible that the sense of hearing can be improved by so simple a remedy? and to enable us to form a proper estimate, I propose to quote two descriptions of cases: the one, to prove the permanent value of the remedy; the other, to show its immediate effect. With respect to the instruments which I use, I may briefly state that they consist of a pair of small forceps, weak in the spring, so as to admit of the blades coming accurately together with the slightest possible pressure. This instrument should differ from the ordinary forceps in another respect—namely, the blades or prongs should have no roughness at their extremities, and should be so rounded as to act as a common probe when in apposition. The intention of this instrument is of course to introduce the moistened wool to the bottom of the meatus, having done which, they should be disengaged from the wool, and withdrawn. The blades being then brought together, the forceps may be again introduced, acting as a common probe, for the purpose of adjusting the wool, on the spot, which, when covered, produces the best degree of hearing of which the case may be susceptible.

An instrument, then, is required for the introduction, the adjustment, and the withdrawal of the wool; and I need scarcely say that the forceps I have described are sufficient, in dexterous hands to accomplish these requirements; but I have found that my patients have preferred a separate instrument for the adjustment as well as the withdrawal of the wool. For these purposes, therefore, I have constructed a simple rounded bar of silver, probe-pointed at one extremity, and with a small screw at the other: the one end serves to adjust the wool, the other most surely will entange and withdraw it. These instruments may be procured of Messrs. Weiss, in the Strand, or of Mr. Thompson, Windmill-street, Haymarket.

A few words as to the mode of applying the wool. The practitioner should get a view of the tympanum, and make himself acquainted with the nature and extent of the disorganization. This he will be able to do by the aid of my speculum auris, a description of which appeared in the Lancet so far back as September, 1839. It is chiefly distinguished from other specula by having a roughened surface at the extremity of each blade externally, to the extent of a quarter of an inch. The roughened blade clings to the meatus, and enables the operator to *straighten*, as well as to *dilate* the passage, and a much better view is thereby obtained. A small piece of fine wool, differing in size according to the case, and fully moistened in water, is then introduced through the speculum to the bottom of the meatus, and adjusted superiorly, inferiorly, anteriorly, or posteriorly, according to the situation of the perforation and other circumstances connected with the case; but care must be taken that the entire opening be not covered, otherwise the experiment will not succeed It is also indispensable to success that the moisture of the wool should be preserved. *Lancet, Aug.* 5, 1848, *p.* 152.

[The operation of perforating the tympanum, it is well known, has not by any means realized the hopes which were entertained of it, when it was first introduced by the Sir A. Cooper; in fact it has been a failure. But now, Mr. Yearsley remarks,]

A new field is opened for testing its utility—not so much with the expectation of amendment from the operation, but as to how far it can be made subservient to the use of the moistened cotton. It is indispensable that the tympanum should be open for the singular remedy to succeed.

Fig 1

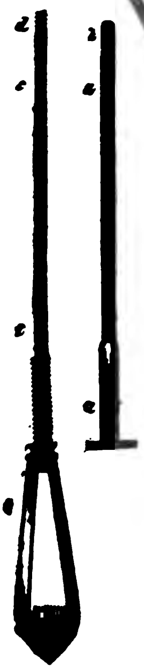
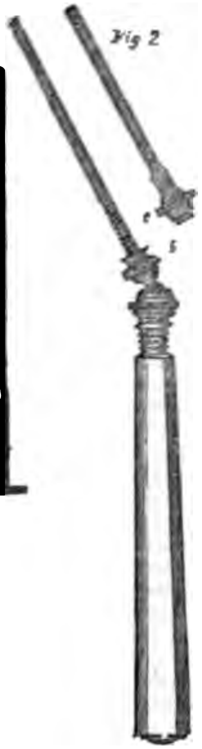


Fig 2



With this instrument the operation is performed—1st, by worming the perforata into the membrana tympani to the necessary extent; and, 2ndly, by a rotatory movement of the canula over the spiral rod in an opposite direction. The cutting edge of the canula thus takes out a circular portion of the membrane, and the instrument is then released, with the excised portion of membrane attached to the screw.

Now, in using this instrument, rotatory movements in opposite directions, and a shifting of the hand from the handle to the canula to effect them, are required, and these will be found to be insuperable objections to its use. Besides, it appears to me, that the operator should be sure of the exact spot upon the membrana tympani which he is going to trephine; but this cannot be obtained with Fibrizi's instrument, for in holding it, the hand altogether intercepts the view of the membrane.

To remove these various objections to the instrument, (see fig. 2,) I have lengthened the handle (*a*) at least three inches, so that it may be steadily grasped by the whole width of the hand of the operator. 2nd. By a ball-and-socket joint, it is capable of being set at any angle in respect to the forepart of the instrument, and it is only necessary to place the point of the forefinger, first, on the projecting rim of the perforator (*b*) which admits of rotation only to a limited extent, sufficient to lay firm hold of the membrane; and, secondly, to carry the finger forwards to the projecting rim at the extremity of the canula (*c*) rotating this likewise in the same direction until you feel that the membrane has been cut through. There is no tasking of the memory as to which direction the perforator should be turned, and which the canula; no shifting of the hand, which certainly endangers the success of the operation: all is simple and straightforward. You have only to remember to turn both the perforator and the canula from left to right, and the operation may be completed in ten seconds. But the great advantage of this instrument is, that the left hand is at liberty, and may be employed in applying the speculum auris through which the *tympanatoire* should be introduced.

Mode of performing the operation.—The proper case being selected, the shaft of the instrument is to be introduced into the ear through a speculum, and the circular piece of membrane removed from the lower and anterior part of the membrane, this being the situation which offers the largest surface of free membrane. The chief points for observance in the operation are the selection of the proper spot, and great care that the spiral has good hold of the membrane before the cutting process is commenced.

[After the operation, care must be taken to guard the ear against the influence of cold and exposure to the air, by wearing a cap, or inserting a piece of cotton wool in the concha; and the wind also must be guarded against until the parts have become gradually accustomed to the new stimulus.]

Lancet, Aug. 19, 1848, *p.* 205.

141.—ON THE MODE OF APPLYING COTTON WOOL, AS A SUBSTITUTE FOR LOSS OF THE MEMBRANA TYMPANI.—By T. BUCHANAN, Esq., Hull Dispensary for Diseases of the Ear.

[Mr. Buchanan describes the following method of applying cotton wool in perforation or destruction of the tympanum; the Eustachian tube being supposed to be pervious, and the ossicula auditus in situ. He says—]

Let the operator take a small quantity of fine, clean cotton wool, saturated completely in tepid distilled water, (to which, in some cases, an alkaloid might be added if necessary,) then mould it to the figure of the membrana tympani, but somewhat broader, beating it gently, so as to get rid of the superfluous fluid, and assist in its formation. In order to facilitate and render the operation more easy and successful, the operator ought to be provided with a silver instrument of the following description:—

The instrument and handle to be of silver, four inches in length, and to consist of four extremely tender probes, clustered around a centre probe. The extremity of each of these probes to stand nearly three lines from the centre probe, and to have a small knob or button on its extremity; that of the centre one to be rather broader than the others. The diameter of these five probes, when united, ought not to be above the size of a common probe. In order to close the outer probes, nigh to the central one there ought to be a small slide, or regulator, by which the operator could regulate the instrument, so as to suit the diameter of the meatus of the patient, whether large or small. If the handle were to be bent, so as to form an angle, the operator could then see the progress of the operation better than if the instrument were straight. These probes may be slightly curved upwards, to assist in applying the cotton in an oblique position, similar to that of the membrana tympani; the operator can at any time bend them so as to suit his purpose or inclination.

Or take a common stout probe, and let the extremity be split up into four slender slips, the length of three lines, and each of these slender wire-like branches to have its proportionable part of the original knob or button, and the operator may bend, separate, or close them, so as to suit the calibre of the meatus of the patient to be operated upon. This simple instrument may be of considerable utility in the operation, for, by means of the other flat end of the probe, any inequalities of the cotton may be adjusted so as to assume any requisite position.

But if the operator has not an instrument of the above description, and the patient is unwilling to wait until one be made, then let him take a small piece of whalebone, of about four or five inches in length, and whip it with a waxed thread upwards of one-half of its length, then split the other half into four slender slips. Or take four fine slender slips of whalebone, of the above length, unite them firmly together, by whipping them with a waxed thread, for the length of two inches, then passing the thread several times between the slips, so as to make them stand out from each other. Let these pieces be of uniform length, and dipped into hot melted red wax, so as to leave an extremely fine knob of wax on each extremity, which can easily be flattened by applying the whole warm to any plain surface. A slide or regulator can be easily formed of fine brass wire, &c.

I have been thus particular in describing the formation of a temporary instrument, in order to assist the young practitioner, who might have neither time nor opportunity to procure one, such as either of the silver ones described; but who might be able to fashion one of whalebone or gutta percha, with which he might, perhaps, perform the operation successfully, and to the satisfaction of all parties. Before the operator attempts to introduce the cotton, he ought to cause the patient to force a strong expiration through the Eustachian tube, so as to clear the tympanum; and, if there be any purulent matter there, it will be forced into the meatus, from whence it can be easily removed by means of a common probe and lint.

Having prepared the ear, and placed the patient on a lower seat than that of the operator, with the rays of the sun illuminating the meatus, and the instrument adjusted to the calibre of the tube—which, if it be of silver, ought to be slightly warmed in hot water—the prepared cotton should then be placed on the extremities of the instrument, or buttons of the probes, and the whole introduced carefully into the meatus, then cautiously pushed inwards until it is placed close to the remains of the membrana tympani, or where it was situated. The most delicate tact is now necessary to preserve the flat extension of the cotton, and place it in its proper oblique position; and also to give due pressure, so as to cause a partial adhesion of the substitute to the manubrium of the malleus, without injury to the ossicula, or deranging the flat and even expansion of the cotton. This is by far the most difficult part of the operation, which will be greatly assisted by the flat extremities of the probes, while the oblique position of the manubrium will guide the operator how to place the cotton in a similar position. Superiority of tact here can only be acquired by frequent operations. If the operator be afraid of too much pressure, he may withdraw the instrument, and apply a camel-hair pencil, slightly moistened in tepid distilled water, with which he should carefully bring the cotton in close contact with the manubrium.

The position of the cotton should now be similar to that of the membrana tympani in the healthy subject, as it is neither more nor less than a substitute for that important membrane. The prepared cotton being thus applied, so as to be supported in its position by the manubrium of the malleus, and, being rather larger than the calibre of the meatus, it will, from its flexibility in the moist state, and its extremely minute and numerous delicate fibrous structure, stimulate the branches which lead to and form the tympanic plexus, while it will cling to the parietes of the tube, so as to accommodate to the usual strength of the undulations of sound; and at the same time, from its elasticity, insure the action of the ossicula so as to affect the sentient parts of the organ. And thus this simple cotton pledget, an article of little intrinsic value, if placed according to the above directions, will in many cases, from its position, state, and structure, become an important and valuable substitute in restoring diminished audition, provided the auditory and assistant auditory nerves have not been injured by exposure to the atmosphere, or to the benumbing effects of strong and loud undulations of sound.

Med. Times, July 29, 1848, p. 203.

142.—ERGOT OF RYE A REMEDY FOR DILATATION OF THE PUPIL FROM BELLADONNA.

M. Comperat has announced a plan by which he has succeeded in removing dilatation of the pupil produced by belladonna in a patient of his, in whom the iris was scarcely visible, so complete had been the action of a small dose of belladonna applied externally. For some days the excessive dilatation resisted the employment of various collyria. He prescribed powdered ergot of rye, taken like snuff. The dilatation disappeared in a few seconds—it soon returned, the same remedy was again employed, and it did not reappear. He thought that ergot might be thus used in cases in which dilated pupil arises from other causes.

Medical Gazette, Sep. 8, 1848, p. 535.

143.—ON THE EXTRACTION OF FOREIGN BODIES FROM THE CONJUNCTIVA.—By Dr. T. Ogier Ward.

[Dr. Ward describes a little instrument made for the extraction of particles of coke from the conjunctivæ of railway travellers.]

It consists simply of a common sewing needle, of sufficient length to be twisted over the flame of a candle into a loop the eighth part of an inch in diameter, and bent so as to form a concavity equal to the convexity of the eyeball; it is filed to form an edge on the inner side of the loop; and the ends are inserted into a small handle. In using it, the concave surface is applied to the eyeball so as to enclose the foreign body; the instrument is then drawn in the direction of the handle, and the internal edge, catching against the projecting portion of the body, raises and withdraws it.

The advantages of this instrument are, that it can be produced within the eyelids, even when closed, and be passek over the surface of the eyeball in any direction, without the slightest fear of injury. Even when the particles are so small as to be invisible to the naked eye, having detected their position by a lens they can thus be scraped off with ease. Lastly, the instrument can be constructed in a few minutes in any situation, no cottage being so destitute as not to be able to provide materials—viz., a needle, a candle, a file or a whetstone, and a bit of wood for a handle.

Medical Gazette, July 14, 1848, *p.* 82.

MIDWIFERY,

AND

THE DISEASES OF WOMEN.

144.—ON ABORTION.—By Dr. W. Tyler Smith.

[Taking the term abortion in its widest signification, Dr. Smith observes that the mechanism by which it is effected varies according to the period of pregnancy at which it takes place. He says,]

In abortion, at various intervals between conception and parturition, the nearer it is to the time of conception, the more it appears like menstruation; the nearer it is to parturition, the more closely is it imitative of that process. In the earliest abortions, the motor actions of expulsion are confined to the Fallopian tubes; there is little motor action of the uterus, either of dilatation or contraction, the ovum being washed away by the menstrual fluid. An exception must, however, be made in the case of women who have borne several children, in whom the uterus is sometimes a contractile organ, even during menstruation. Usually the uterus does not contract with any force during the first two or three months, or abortion would probably be far more frequent than it is. Abortion at this time is rather a mechanical dislodgment, by the separation of the ovum from the uterine parietes, than a distinct motor act of expulsion: the motor action of the uterus being so slight. After the ovum, becoming separated from the uterus, has entered the vagina, it excites expulsive action of the abdominal muscles, similar to those of micturition and defecation. When quickening, or the first peristaltic movement of the uterus, has occurred, the uterus dilates and contracts as in natural parturition, only less perfectly; and abortion becomes gradually divisible into the different stages of natural parturition. There is the dilatation of the os uteri, the contraction of the uterus at intervals, or in pains, and the bearing-down, or expiratory actions which expel the ovum from the vagina. The condition in which the ovum is expelled, varies also according to the time at which it takes place; in the early months the ovum is expelled entire, except when decomposition has taken place, the fœtus being involved in the membranes; but as utero-gestation advances, the membranes are ruptured during expulsion, as in natural labor, and the fœtus and secundines are discharged separately.

[Attention to the various causes of abortion, centric and excentric, must form the basis of our prophylactic measures. Amongst these causes, Dr. Smith mentions *mammary* irritation, and observes, under this head, that weaning should always take place as soon as the occurrence of pregnancy during lactation becomes evident. He refers briefly to *dental* and *vesical*, and then to *ovarian* irritation. With respect to the latter he says:]

Here our cautionary plans should be chiefly confined to the catamenial or periodic dates. Patients suffering from severe ovarian irritation during pregnancy, should be treated in the periodic exacerbations much in the same way as we should treat dysmenorrhœal patients during the actual periods attended by pain and difficulty. Warm hip-baths, not exceeding blood-heat; warm enemata of the same temperature; the application of a plaster of opium or belladonna over the sacrum; and most especially the avoidance of coitus during the periodic dates of pregnancy, should be directed. As regards the blind periods of utero-gestation, as they may be called, continence is as proper in all cases at these times, as it is during the actual flow of the catamenia. It is during the first half of pregnancy, or in those women who have suffered from dysmenorrhœa before impregnation, that moral and physical sedatives should be most strictly enjoined. I may here observe, that in dysmenorrhœal cases the times of conception are probably times of abortion, the impregnated ovum descending at once through the Fallopian tubes, uterus, and vagina, with an apparent return of the catamenial discharge, instead of tarrying for development in the uterus, so that women, under these circumstances, may never be conscious of having conceived, though they really do so. There can be little question but that many supposed cases of sterility are of this kind; owing to increased excitability of the motor apparatus of conception, the generative act never goes beyond impregnated ovi-position; abortion follows so closely upon abortion, that neither the conception nor the abortion are perceived. Such cases, admitting, as they do, of almost certain remedy, are very different from cases of actual sterility. I have just said, that in ordinary instances of abortion excited by ovarian irritation, it is during the early months that precautionary measures are of most importance; but in those extraordinary cases in which abortion is caused by the adhesion of the placenta to the os uteri, it is in the latter periodic dates of pregnancy when the greatest danger is incurred. I mentioned to you in the last lecture, that, even when not the exciting cause, ovario-excitor action was still in many cases the determining cause of premature action of the uterus; so that in all cases of threatened abortion it behoves the medical attendant to treat the periodic dates with circumspection.

I have been so much impressed with the necessity of attending to the imperfect utero-gestation, that I have framed a Calender or Table, for reducing calendar to lunar months, and I think it likely to be useful to others, by economising time. The small circle of the calendar, contains the fifty-two weeks of the year, divided into the twelve calendar months, and the thirteen menstrual periods.

The segment on the outside of this circle contains a scale of 280 days—the normal duration of pregnancy—divided into the ten periods of utero-gestation. I have marked five days at each period, as the ordinary duration of the catamenia, though in some women it is greater, in others less than this. Reckoning the catamenial period preceding conception, and the lochial period of parturition, I have included eleven catamenial dates; so that the scale really represents 285 days. The best mode of computing the time of parturition I believe to be this: you should find the date of the commencement of the last menstruation, upon which conception would follow a few days after the cessation of the catamenial flow, and you may then expect that the ovarian irritation, or the lochial period, which determines the state of natural parturition, will begin with the show or the persistent contraction of the uterus, at the commencement of the eleventh periodic date, and that labour will be fully developed on some one of the days of this ovarian period. Thus, if this scale of calendar months be made moveable, and the scale of menstrual or lunar periods fixed, all you have to do is to turn the moveable circle round, so as to make the arrow at the word "conception" point to the date at which the last menstruation commenced, and the second arrow, at the other end of the scale, points to the day when the commencement of parturition may be expected. The menstrual, or lunar scale will also mark accurately the date of each of the periodic excitements during pregnancy; so that you may at once, without the trouble of calculating, give your patients the time of parturition, and the dates when all improper physical irritation and causes of abortion are to be specially avoided. Of course, these remarks apply to strictly natural utero-gestation, occurring in women who menstruate regularly every twenty-eight days.

This simple contrivance will give you, at a glance, other information of a practical kind. It indicates the date—1. Of the abortive periods. 2. Of parturition. 3. Of quickening, and the first uterine movements. 4. Of the viability of the fœtus. 5. Of the periods when premature labour may be induced most easily and safely. 6. Of the periods of special danger in placenta prævia, &c.

[Dr. Smith dismisses the subject of rectal irritation in a few words, and then comes to speak of *vaginal* irritation as a cause of abortion. He advises in the case of women who have aborted during previous pregnancies, or in whom special symptoms lead us to expect this accident, that the most rigid continence should be observed during the whole of pregnancy; and that in all irritable subjects coitus should be avoided during the ovarian periods of the gravid state. We must be careful also not to cause irritation by the use of the plug, when we apply it in threatened abortion: and with this object.]

The plug should not be so large as to stimulate the vaginal surface excessively, and it should be fairly introduced into the upper and roomy part of the passage, so as not to irritate the ostium vaginæ; at the same time there should be nothing like hard pressure on the os and cervix uteri. Whenever the presence of the tampon, carefully applied, permanently increases the periodic pains felt in threatened abortion, it should at once be withdrawn, unless we resolved to abandon the ovum to its fate. The plug ought never to be left in the vagina more than twelve hours at a time, otherwise it becomes extremely fœtid and disagreeable, and probably injurious; it is better even to take it away and renew it oftener than this, and to dip it in a weak solution of the chloride of lime before its introduction.

[Any persistent irritation of the *uterus*, but especially of its os and cervix, may cause abortion; we must, therefore, endeavor to relieve those affections, such as inflammatory ulceration of the os and cervix, which admit of treatment: and we shall find, Dr. Smith observes, that our remedial measures, though in themselves sources of uterine irritation, are, if judiciously pursued, much less likely to cause abortion than the disease itself. After referring briefly to *retroversion* of the uterus, as a cause of abortion, Dr. Smith proceeds to say,]

In the prevention of abortion, morbid conditions of the placenta require to be considered. The placenta is to the fœtus what the branchia are to the fish, the blood of the mother being the fluid medium in which the fœtus respires oxygen during intra-uterine life, a point which has been ably insisted upon by Professor Simpson. For this reason it appears to be, that the blood of the mother during pregnancy is more highly oxygenated than at other times, approaching to the state of inflammation, as may be seen by the buffy coat and the greater coagulability present in the blood drawn from pregnant women. The placenta has a tendency to become unfit for fœtal respiration towards the end of utero-gestation, when nature is preparing for the change from branchial to pulmonary breathing. There is frequently observed on the surface of the mature placenta crystals of carbonate of lime, which must tend to interfere with its functions as a respiratory apparatus, and generally, I believe, to facilitate its separation from the uterus. This caducous preparation of the placenta, by the deposition of the salt of lime, is probably connected with the demand for ossific matter in the fœtus, but it must also remind you of the similar deposit of silica in the stems of ripe fruit, in order to facilitate its separation from the parent tree; or we may compare it to the deposit of earthy salts in the lungs and other organs in old age, as preparatory to the death of the individual. It is pretty certain that in some cases of abortion in the latter months, caused by the death of the fœtus, the death has depended on the low respiring power of the placenta, the placental development having progressed so rapidly as to render the organ prematurely deciduous.

Under these circumstances, the child dies asphyxiated, unless born into the atmospheric air, just as the tadpole perishes when its branchial development has concluded, unless it can be removed from water to the air. In the opposite cases to this, we have sometimes to deal with retention and adhesion of the placenta, because it is not ripe for its separation at the time of labour. Other morbid conditions of the placenta may tend to the death of the fœtus, and indirectly to abortion, such as inflammation and induration of the organ, tubercular deposit, or effusion of blood into its structure—placental apoplexy, as it might be called: but such morbid states are obscure in their diagnosis, and very much removed from definite treatment.

Dr. Power was, I believe, the first to enter fully upon these non-respiratory causes of abortion, and to propose means for aiding the respiration of the fœtus by purifying the maternal blood. He recommended the depuration of the blood of the mother, during pregnancy, by attention to diet, the respiration of pure air, and the careful regulation of all the secretions. In pregnancy, the lungs of the mother have to consume the carbon of two circulations; and in cases where, from the pressure of the abdomen upon the thorax, or contraction of the chest, the respiration is imperfectly performed, Dr. Power prescribed the inhalation of air containing an increased quantity of oxygen, or the use of medicines containing a large quantity of oxygen loosely combined, such as the nitric acid. More recently, Professor Simpson states that in cases where the fœtal respiration is imperfect, he has found the chlorate of potash useful on the same principle—that of arterializing the maternal blood. In cases where the death of the fœtus in utero, by asphyxia, has occurred in former pregnancies in the latter months, Professor Simpson further recommends the induction of premature labour before the death of the child. These facts should at least impress upon accoucheurs the importance of considering the state of the blood and the fœtal respiration in all cases of pregnancy. It is evident that the sanitary condition of the fœtus must always depend upon the purity of its respiring fluid in the blood-vessels of the mother.

It is worthy of remark, that in abortion the occurrence of hemorrhage is far more frequent than in natural labour. Abortions are, indeed, rarely free from hemorrhage, and a sanguinous discharge is the commonest symptom of a threatened premature expulsion of the ovum. When the circulation between the embryo and the mother is carried on by the decidua, as it is in the very early months, separation of any part of the ovum from the uterus must necessarily produce hemorrhage; but as the placenta is gradually formed from the decidua and chorion, and the utero-fœtal circulation becomes circumscribed and localized in one particular part of the uterus, the chances of hemorrhage are very much diminished, unless the placental portion of the ovum should be detached from the uterus. The decidua at first performs the function of a diffuse placenta, enveloping the whole embryo, so that separation at any point, in a commencing abortion, necessarily produces hemorrhage. In this point of view, the hemorrhage of early abortion is allied to the unavoidable hemorrhage of placental presentation. When the placental portion of the membranes is attached high up in the uterus, and there is hemorrhage, with discharge of the blood externally, the blood has burrowed its way by gradually separating the membranes from the uterus, so as to find a passage, after the manner of dissecting aneurism. Natural gestation, as distinguished from placenta prævia, admits of the expression of the following axioms respecting hemorrhage:—The earlier the expulsion of the fœtus, the more certain is the occurrence of hemorrhage, and the less the danger from the loss of blood; but as pregnancy proceeds towards the natural termination, the chances of hemorrhage diminish greatly, while its importance, when it does occur, increases in an equal degree. In abortion the danger from hemorrhage is before the expulsion of the ovum; in labour at the full term, it arises after delivery.

In abortion in the early months the uterine hemorrhage itself is similar to the hemorrhage occurring from other internal organs, and the means for arresting it are also much the same. We should aim at closing the mouths of the bleeding vessels, by diminishing the force and frequency of the circulation; by astringents, and by promoting coagulation by pressure, refrigerants, &c. The loss of blood itself so directly tends to diminish the circulation, that depletion is seldom necessary in abortion; the best astringents are the acetate of lead or pure tannin given internally; as refrigerants, the cold napkin applied externally, or ice introduced into the vagina, are useful; while the vaginal plug, or pressure over the pubis, are the best modes of producing coagulation mechanically. But all these remarks apply to the very early separations of the ovum from the uterus, when the uterus is not so developed as to be decidedly contractile. When pregnancy is more advanced, and the organ contracts, the mouths of the separated vessels are comparatively large, and new principles must be introduced into the treatment of the hemorrhage. We can only arrest the flow of blood by exciting uterine contraction. When we now use the tampon it is not to produce coagulation, but to excite contraction; if we apply cold, it ought to be with the same intention; internal astringents are of no use whatever. This is a practical distinction, for if we apply cold to produce coagulation, it should be continuous; if for contraction, it should be intermittent. There is, of course, a time in the history of abortion in the early months, in which a combination of the two plans are advisable, according to the development of the uterus.

It is an important question,—When should the hope of saving the ovum be abandoned? Women have gone on to the full time after amputations, after local injuries in the neighborhood of the uterus, and such large uterine hemorrhage, that there could be no doubt a considerable separation of the ovum from the uterus must have taken place. There is in some women a remarkable tenacity of the product of conception, so that the effort to prevent abortion should be persevered in as long as possible.

In expected abortion, one of the most sure indications of such an amount of disturbance in the uterine nervi-motor apparatus as will probably expel the child, is afforded by sudden relaxation of the bowels; before the regular contractions of the uterus set in, there is generally a diarrhœa, with some amount of tenesmus. We must judge the proper times in which to adopt measures of expulsion and retention, by the relation of the ovum to the os uteri, particularly its protrusion through the dilated mouth, and the amount of the previous hemorrhage. If such changes in the ovum have occurred as to warrant our belief in its death, or if the hemorrhage has endangered the mother, we should not hesitate about its prompt expulsion. In the later abortions, in the fifth or six months, auscultation affords a valuable aid to diagnosis. If we can, in the earlier stage of threatened abortion, hear the fœtal heart; and if, in the course of the hemorrhage or separation of the ovum from the uterus, we distinguish the failure and cessation of the heart's action, we may conclude the fœtus to be dead, and think only of the delivery of the mother.

In abortion, the chief danger of the mother is from loss of blood; but this is rarely so considerable as to occasion immediate risk, though nothing tends more surely to ruin the constitution than a succession of hemorrhagic abortions. Other dangers—such as rupture of the uterus, and convulsions—are of still more rare occurrence. When it has been decided that the ovum cannot be saved, the uterus must be emptied as soon as possible. To effect this, the membranes must be ruptured—a measure which generally diminishes the hemorrhage considerably, as the proportion of the liquor amnii to the size of the fœtus is greater in the earlier than in the later months. It is, however, more difficult to rupture the membranes in such abortions, owing to the undeveloped state of the os uteri, and the thickness of the membranes themselves. If the hemorrhage continues, and the ovum cannot at once be removed, the sponge plug must be had recourse to, both with the intention of stopping the hemorrhage and exciting the uterus to expulsive action; the plug should now be pressed upon, or even within the os uteri if possible. If the os uteri is dilated, we can endeavour to separate the ovum from the uterus, and bring it down, care being taken not to break the friable mass it presents. The ergot of rye should be given to contract the uterus, and so arrest the hemorrhage, and aid in expelling the ovum in cases where it cannot be brought away by the fingers. When the uterus cannot be otherwise excited, a purgative enema will often bring on immediate expulsion. In many cases, a lingering abortion is terminated by vomiting, the expulsive effort being more powerful than the bearing-down excited by the ovum. In other cases, the occurrence of fainting ends the process, the syncope being accompanied by powerful contractions of the uterus. It seems as though, in the undeveloped state of the uterus, it was inadequate to expel its contents without the aid of some of the other expulsory processes, such as vomiting or defecation. When the uterus is emptied of its contents, the hemorrhage almost invariably ceases; if it does not do so, we may be almost sure that there are either some parts of the membranes or coagula retained in the uterus and vagina, the removal of which, when they produce bleeding, is as necessary as the removal of the placenta in ordinary labour. It is well known that women do not suffer so much after loss of blood in abortions as in labour at the full term: this is because they have not been exposed to the wearying and irritating effects of full pregnancy, and because the abdominal pressure removed is not to the same extent; still, after abortions, the abdominal bandage should be applied.

To eradicate the abortive diathesis, prolonged continence ought to be observed. A year's entire rest to the sexual system is not too much in severe cases, and the catamenial periods should be carefully attended to. Dysmenorrhœa should be relieved, if there happens, as there frequently will happen, to be a tendency to this disease. Any disease of the utero-vaginal passage should receive appropriate treatment. Everything which can possibly be devised should be resorted to, to give tone to the uterine nervi-motor system—such as the administration of iron in delicate subjects, the cold douche of the loins, and general cold bathing. In very obstinate cases I should be disposed to try the effects of a continued galvanic current through the spine and sexual organs, or I would prescribe small and continued doses of ergotine or strychnine as tonics of the utero-spinal axis. The general sedatives of the nervous system during pregnancy are, moderate exercise, spare and cool diet, small bleedings in plethoric or in sanguine habits, mental quiet, tepid or cold hip-baths, and, above all, a pure atmosphere. The nervous system in pregnant women resembles in its irritability the nervous system in infants and young children; ordinary narcotics are therefore stimulant rather than sedative, and as such ought not to be prescribed in ordinary cases during utero-gestation.

I may mention, in conclusion, that without a knowledge of excito-motor action, no large, comprehensive, or successful view can be taken of the pathology and therapeutics of abortion.

Lancet, April 29, 1848, *p.* 466 ; *and June* 17, 1848, *p.* 656.

145.—ON THE NERVI-MOTOR ACTIONS OF LABOUR.—By Dr. W. Tyler Smith.

[Dr. Smith gives the following account of the actions of labour in their natural order of succession.]

First in the order of events, there is the excitation of the ovarian nerves, followed by the equable and continuous contractions of the uterus. Then there is the pressure exerted by the fœtal head, as yet defended by the liquor amnii, upon the os uteri, and the consequent excitement of the orificial nerves, with the answering and intermittent contractions of the uterus.

In the next place, the vaginal excitor nerves are irritated by the pressure of the now advancing and undefended head, or presenting part of the fœtus, an irritation which calls forth the respiratory action of labour, in addition to the uterine contractions. Then we have the excitation of the nerves of the ostium, vagina, and the remarkable modifications of motor action thus produced. After the expulsion of the fœtus, the placenta remains to supply an intra-uterine stimulus, sufficient to affect the now exalted excitability of the uterine nerves, and thus to cause its expulsion. When the placenta has been expelled, the excitation of the uterine surface, from which the placenta has been separated, the excitation of the mammary nerves by suckling, and by the secretion of milk, and the excitation of the pneumogastric, now in excito motor relation with the uterus every time food or drink are taken, are, with the aid of emotion, and the continuing ovarian irritation which has been present during the whole of labour, perfectly sufficient in normal cases to prevent hæmorrhage, and gradually to effect the return of the uterus to the contracted and comparatively small size of the unimpregnated woman who has borne children.

The physical pain of labour, as distinct from the muscular contractions, is undoubtedly depressing in its effects; but still it is unlike other and purely pathological pain, inasmuch as it may be very distressing, and yet disappear entirely during the intervals of the pains, so that in a painful labour, the patient may sleep or remain quite cheerful between the pains, and at the close of delivery may not feel an amount of exhaustion proportionate to the intensity of her suffering. After operations, or in very painful diseases, death may be caused apparently by the simple effects of excessive pain. But in death occurring after delivery, or during the course of prolonged parturition, the merely physical pain of labour must never be considered alone; it must be viewed in connection with the physical *shock* of labour as distinct from physical *pain*. Pain affects the cerebrum; shock affects the spinal centre, which does not feel pain. Every severe throe of a protracted labour is a distinct blow to the brain, in so far as it is painful; and it is also a distinct blow upon the spinal centre, as much so as though this organ had actually been struck. The brain is more resilient, as it were, under shock than the spinal centre; and when parturient women die of sinking, it is from the effects of the successive shocks of the pains of labour upon the medulla spinalis rather than upon the cerebrum. This view of the subject leads to important modifications of the treatment of sinking, and the effects of shock in parturition.

There is an unpublished experiment, of great interest, by Dr. Marshall Hall, not performed with reference to parturition, but during his electrogenic researches, which may be brought to bear upon this point. He took two frogs, divided the spinal marrow in both, and then immersed them in a solution of strychnine till they became tetanic. When allowed to become perfectly still, they would remain without spasm if carefully defended against all external excitation. When in this state, one frog was kept in a state of perfect repose; the other was irritated from time to time, so as to produce strong tetanic action. Of these two frogs, the first would recover perfectly in a few days; the second would die very quickly. There was here no sensation of pain, because the spinal marrow was divided; the exhaustion was, therefore, purely of a spinal or physical kind. Dr. Marshall Hall himself applies this experiment to the treatment of tetanus; but it has also an application to the physical pains of parturition. When women die from prolonged labour, death occurs, not merely from exhaustion by physical suffering, but from exhaustion caused by the strong muscular contraction of the uterus and its associated organs. The discharge of the vis nervosa and the vis insita in the muscular contractions of each pain has a depressing effect quite distinct from, and independent of, the mere painfulness of each uterine action. Each of the great contractile efforts of labour has an exhausting effect; but when more severe, or continued longer than usual, every returning pain is a distinct *shock*. A woman insensible to pain may still sink, and perish from the spinal shock of labour.

One effect of this shock is in a degree to paralyze the rectum and bladder. Inability to empty the bladder is very common for some days after a severe labour; and in rare cases, the atony of the vesical nerves becomes chronic. This state of the bladder is commonly referred to physical injury of the cervix vesicæ, rather than to any nervous shock; but though local injuries do occasionally occur, causing retention or incontinence of urine, I am convinced that the inactivity of the bladder after parturition is, in the majority of cases, the result of nervous shock. The rectum is similarly and even more constantly affected after labour, and from the same cause. Constipation is so constant, that it is almost a matter of routine to prescribe a laxative two or three days after delivery. I am given to understand that homœopaths leave the bowels to chance, or give globules of arnica—much the same thing, according to our belief—and the result is, that the bowels are often not moved until eight or ten days after delivery—a practice which must necessarily predispose the subjects of it to puerperal fever or convulsive attacks. It is as proper to relieve the bowels as soon after labour as it can be done without disturbing the uterus, as it is to relieve the bladder when retention occurs. Not only the shock of parturition, but other forms of excitation, affect the rectum and bladder in the same manner. Excessive sexual excitement produces inactivity of the rectum and bladder, and these organs are among the first to be affected in tabes dorsalis. Such facts are useful, as illustrating the effects of parturient excitement upon the spinal endowments of the other organs of the pelvis.

The lower part of the spinal marrow may be considered as the analogue of the medulla oblongata. In the one, there are congregated the keys of the motor arcs of deglutition, inspiration, expiration, closure of the eyelids, &c., with all their various morbid actions; and in the other, the centres of the motor acts of parturition, defæcation, micturition, and conception, as far as the pelvic organs are concerned.

Probably in the interval between these two congeries of reflex spinal arcs in the medulla oblongata and the inferior medulla spinalis, the cervical and thoracic portions of the spinal marrow are devoted to the reflex arcs belonging to the trunk and the lower extremities. The excitor nerves of defæcation and micturition are also in relation with the centre of the reflex respiratory actions in the medulla oblongata, and thus the expiratory actions excited in defæcation and micturition are to be explained. The reflex arcs concerned in parturition are still more extensively diffused. The vagina, the uterus, and the ovaria, are, as we have seen, in relation with the spinal marrow through the medium of the sacral, lumbar, abdominal, and probably also the thoracic intercostal nerves. The actions excited in parturition are numerous in a corresponding degree, and we may compare parturition in some respects to respiration in the libellula, where each segment of the insect is a centre of respiratory action. There is another point of view in which we may consider the reflex arcs of the medulla oblongata and the lower medulla spinalis. In those of the invertebrata which admit of separation into distinct segments, each of which may live as a distinct animal, every ring possesses an independent centre of physical motion. As the vertebræ of the vertebrata, are analogues of the rings of invertebrate animals, there should also belong to each vertebra the representative of a spinal centre. Are not the reflex arcs collected together in the medulla oblongata the spinal centres of the cranial vertebræ? and are not the reflex arcs of the lower medulla the spinal centres to the pelvic rudimentary vertebræ? This view brings the reflex motor arcs of the spinal centre into harmony with the splendid ideas of Oken, Goethe, and their distinguished successors in archetypal anatomy. *Lancet, July* 29, 1848, p. 118.

146.—NOTE ON THE MEANING OF THE TERM "EXCITATION."—By Dr. Tyler Smith.

The term excitation, in its application to spinal pathology, has a peculiar meaning, very different from sensation or irritation. It may be said that sensation belongs to the cerebral, irritation to the vascular, and excitation to the true spinal system. It cannot be too much dwelt upon, that there is no relation whatever between pain and spinal action, whether pathological or physiological. This one idea alone, when it comes to pervade the whole obstetric art, will, I have no doubt, effect a great change in the practice of midwifery. When a considerable augmentation of the vis nervosa occurs in the spinal system, moderate stimulation frequently excites stronger reflex actions than actual violence would do. In the case of the stomach, we see the act of vomiting more readily excited by tickling the fauces with a feather, than by ruder measures. The part which is the excitor of vomiting may even be ulcerated without exciting this act, so likewise will gentle manipulation of the os uteri, under certain circumstances, produce more excessive motor action than mechanical violence, or even rupture of the organ. This important fact, so capable of salutary application, has never been more than faintly recognised. The stimulability of the spinal system requires special study with reference to these points; but no advance could be made without a knowledge of the principle of reflex spinal action. *Lancet, Oct.* 21, 1848, *p.* 442.

147.—ON STERILITY DEPENDENT ON OOPHORITIS, &c.—By Dr. E. Rigby, Lecturer on Midwifery at St. Bartholomews, &c.

[As this affection is not well known, and has only recently excited much general attention, Dr. Rigby relates a case at length.]

C. C., aged 31, brunette; tall; married six years. One child born about a year after her marriage.

Oct. 18, 1845. Complains of constant and severe pain of both groins, especially the left, with severe dragging pain in the loins and lower part of the abdomen, both of which are increased by stooping, but relieved by standing. The catamenia come regularly and last three or four days; they are preceded for nearly a week by much suffering, which also continues during the whole period; the discharge is very profuse with clots and exdations; constant urging to pass water, which is turbid; bowels unhealthy; tongue red and dry; has had profuse and painful menstruation from her youth. Since the birth of the child, the pain has been considerably relieved, although the discharge has been increased.

Examination per Vaginam.—Nothing wrong about the os or cervix uteri; the uterine sound passes easily to the full distance (2½ inches) without pain, but is followed by profuse discharge of blood.

Examination per Rectum.—High up in the direction of the left ovary a hard body can just be reached, which is acutely sensitive to the touch, and which she describes as the centre of her pain.

℞. Ung. antimonii pot. tart. inguini sinistro omni nocte applicand.

℞. Pil. hydrarg. chlorid. co. gr. v., alternis noctibus.

℞. Sodæ potassio tart. ʒj. o.m.

25. Catamenia appeared on her return home last week; a copious eruption has come out on the left ovarian region, which is very sore; the pain on passing fæces and on sitting down is not diminished; evacuations more healthy; appetite bad. Rep. pil. and sodæ potassio tart.

℞. Acidi nitr. dil. ♏xv. ex infus. gentianæ comp., ter die. Hirudines vj. ovario sinistro.

Nov. 1. The ointment has produced much irritation and pain, so that she cannot say whether the original suffering is relieved; the eruption discharges freely; appetite better; bowels rather confined; catamenia still continue. The leeches do not appear to have afforded much relief. Rep. med.

8. Eruption still very sore, and discharges freely; the ovarian pain, the irritability of the bladder and of the rectum, are distinctly less; catamenia returned with less pain; fewer coagula and exudations; appetite better; bowels regular. Rep. med.

15. Continues to improve in her health; pain of left groin diminished, but considerable suffering is produced on examination in the direction of the left ovary. Rep. med. Hirudines vj. ovario sinistro.

22. Leeches did not bleed very well, but she felt easier and better afterwards; general health much improved; bowels open about three times a day; frequent desire to pass water: no tenderness in left ovarion region. Rep. Med.

29. Feels better; was in great pain four days ago, and observed some blood with the fæces, to the amount of two or three table-spoonsful, since which she has felt better; on examination this morning some blood was observed upon the finger; the ovary was not so tender. Rep.

Dec. 27. Feels much better this week, but still has occasional pain; has been suffering from slight catarrh during the last week; catamenia appeared at the beginning of the month, with but trifling pain; no coagula or exudations; bowels confined.

℞. Pil. hydr. c. coloc. gr. x. h.s.p.r.n.

℞. Aquæ menthæ viridis, aquæ destillatæ, aa. ℥ vss.; acidi sulph. dil., ♏x.; syrupi rhædos, ʒss. M. ft. haustus ter die sumendus. Sodæ potassio tart. ʒij. o.m.

Jan. 3, 1846. Feels well; expects catamenia in about a week. Rep.

24. Catamenia have not yet appeared; she has no pain in the groins, but slight pain in the back; bowels open; tongue tolerably clean. Rep.

Feb. 14. Thinks that she is between two and three months advanced in pregnancy; feels pretty well in general health, but is much troubled with morning sickness; the breast presents a well marked areola, the follicles are enlarged, and the nipple œdematous. Rep.

28. Health improved, but the tongue is red, with a white fur; the bowels are healthy but relaxed.

Haust sodæ tartratis ter die. ℞. Pil. hydrarg., ext. hyosc., aa. gr. v. alternis noctibus. Rep. sodæ potassio tart. o. m.

April 11. Has continued to improve slightly in health, but has had considerable irritation of the bladder this week, with pain on passing water.

25. Pregnancy advancing favorably; let her pay strict attention to the state of her bowels. Rep. med.

May 2. Complains of much irritability of the bladder; fancies herself harder than natural, and that the supposed movements of the child are more like throbbings.

Examination per Vaginam.—Os uteri high up in the hollow of the sacrum, round, soft, and closed; cervix barely a quarter of an inch in length. I think I can distinguish a slight trace of ballottement. Rep.

9. Pregnancy progressing; irritability of bladder; urine high colored.

℞. Liq. potassæ ♏xv. ex. inf. aurant. co. bis die.

June 27. Feels well. Rep.

Sept. 16. Was delivered this day of a healthy living child; the whole course of the labour was perfectly favorable, and she is doing well.

It is difficult, and sometimes impossible, to trace the history of these cases to their origin; but from the fact of her having suffered from dysmenorrhœa up to the time of her marriage or pregnancy, and never afterwards, we have reason to conclude that the canal of the cervix, or os uteri, had been unusually small, and produced considerable resistance to the free discharge of the catamenial fluid. That this form of dysmenorrhœa is not necessarily a barrier to conception is a well-known fact, although it is equally certain that sterility is the more frequent result; but when pregnancy does occur under these circumstances, the expulsion of the fœtus, even when very premature, produces such an amount of dilatation in the contracted canal as effectually to remove the cause of dysmenorrhœa. I have long since (Feb. 15, 1845) pointed out the fact, that obstructive dysmennorrhœ, when of sufficient severity and duration, is frequently attended with ovarian inflammation, which may be reasonably accounted for by the severe struggle and painful efforts which the uterus is excited to make at the menstrual periods, for the purpose of expelling the catamenial fluid which has accumulated within its cavity. This state of uterine excitement must be a source of considerable irritation to the ovaries, occurring at a time when they are known to be highly congested, and their vessels in a condition near akin to that of inflammation. That the uterus suffers great distension from the menstrual fluid accumulated within its cavity is known by the fact that the patient herself will frequently feel it like a hard painful ball behind the symphisis pubis, which disappears as soon as the discharge comes on. In a great many instances I have reason to know that the urerus never entirely clears itself of the catamenial fluid, but remains full for many days afterwards, and probably retains a certain quantity until it is expelled at the next period, as in many of these cases the moment a dilator is introduced, a quantity of brownish-red shiny discharge comes away, the characters of which are also evident from its peculiar smell. I may also add that, in almost all cases of long-standing obstructive dysmennorrhœa, the cavity of the uterus is considerabiy enlarged, being frequently half and sometimes a whole inch longer than natural, and allowing the sound to move about with an unusual degree of freedom.—The blood which followed the introduction of the sound in the present case was probably merely from the circumstance of the catamenial period having just arrived.

I had hoped from the irritability of the bladder, that the anterior portion of the ovary was the part chiefly affected, and applied the tartar-emetic ointment accordingly; but the little relief it produced, the pain on defecation and sitting down upon a hard seat, as also the results of examination *per rectum*, proved that the posterior half of the gland was also implicated. The second applica'ion of the leeches appears to have given considerable relief, and the discharge of blood from the bowel, which followed a few days afterwards, was attended by a similarly beneficial effect.

Medical Times, July 8, 1848, p. 152.

[One of the most prominent symptoms in the following case was *profuse and long continued menorrhagia.* Dr. Rigby observes,]

I know no form of menorrhagia where the discharge is more profuse or the disease more obstinate, than when it is dependent on an inflamed state of one or both ovaries; and here again I may observe that in by far the majority of cases, it is the left ovary which is affected—indeed, it is quite an exception to the rule when we find that it is the right one. It is difficult always to account for these peculiarities, and we are apt to theorize in attempting their explanation; but it has frequently struck me that a loaded state of the sigmoid flexure of the colon, from the pressure which it must exert on the neighboring parts, would render the left ovary more liable to congestion by obstructing its returning circulation. As in the case above alluded to, which had also been for many years of her life one of obstructive dysmenorrhœa, the history of the symptoms and the examinations distinctly prove the existence of ovarian inflammation; and its relief by appropriate treatment also shows that this affection was the cause of the menorrhagia, which ceased as soon as the oophoritis was relieved. The following case not only shows that sterility must result under such circumstances, but also that impregnation may occur even after long standing oophoritis and menorrhagia, when once those conditions are removed.

E. L., aged 22: tall, gaunt, and emaciated; pale and anemic.

July 25, 1845. Complains of frequent attacks of vaginal swelling and flushing; bowels habitually costive; has a barking cough; tongue pale and glossy; throat relaxed; bad taste in the mouth, and much gastric derangement; pain of sacrum increased by the passage of solid fæces; pain of left thigh, which is slightly swelled to the foot, requiring her to wear a larger shoe.

She first menstruated at the age of seventeen, from which time she has been constantly subject to menorrhagia. She also dates from this period the acute pain which she feels in the hollow of the sacrum on the passage of solid fæces. In October, 1843, she consulted a practitioner, who leeched the os once, and blistered the sacrum. After being under his care for six months the discharge stopped, and appeared only at irregular intervals of about three months, until May, 1844 when it continued in an irregular manner until the 20th July. These catamenial discharges were attended with severe pain of back and pelvis, and slight exudations. In January, 1845, she consulted another physician, who considered that the menorrhagia depended in great measure on a torpid liver, for which he accordingly treated her, and produced some relief.

Examination per Vaginum.—Os externum small and intensely tender; the vagina is evidently swollen; os uteri is situated more backwards than usual, it is soft but not round; the cervix is short, and the anterior surface of the uterus is felt firm and hard, and inclining towards the bladder; no part of the uterus within reach is peculiarly tender to the touch.

Examination per rectum. The finger produces no pain until it reaches the left ovary, which seems nearly in the upper part of the hollow of the sacrum; it feels like a large nut, and is exquisitely painful to the slightest touch, so that I could not ascertain its real size, or how far it was moveable; no pain is felt in the direction of the ovary by pressing on the left groin, nor is any motion communicated to it by doing so; nothing abnormal is to be detected on the right side of pelvis.

℞. Pilulæ hydrarg. chloridi co., extr. hyoscyami, aa. gr. v. o.n.

℞. Acidi nitrici dil., tinct. hyoscyami, aa. ʒij.; infus. sennæ co., ℥iijss.: infus. gentianæ co., ℥iv. M. ft. mist. cujus sumat. cochl. magn. ij. ter die. Hirudines vj. ovario sinistro.

July 28. Leeches were applied on the 26th, and bled well, with much relief; bowels have been opened three or four times daily, and the evacuations are much improved in appearance and odour; pain and swelling of the left *thigh* and foot have subsided; tongue better; her general appearance is much improved; the face has lost its sallow tinge; the pulse is good; there is no discharge. Pergat.

Aug. 2. No discharge; health improved. As there is still considerable tenderness of the ovary when felt *per rectum*, some leeches were again applied, of which only three took and bled well.

℞. Pil. hydr., extr. coloc, extr. hyos., aa. ℈j. M. ft. pil. xij. sumat. ij. hora somni.

℞. Essentiæ sarzæ comp., ʒj. ter die ex liquore calcis c. lacte.

℞. Liq. plumbi diacet., liq. opii sedativ., aa. ʒij.; aquæ destill. ℥viij. M. ft. lotio.

4. The subsequent bleeding was less than before. She remarks that the pressure of the tube against the ovary did not produce half the amount of pain which it had done hitherto. Until now she has not had a healthy appetite for plain food. The bowels are opened by one quill only. Rep. mist. sarzæ ex liq. calcis c. lacte. Rep. lotio.

℞. Ferri sulph., gr. ij.: extr. coloc. co., gr. iij. M. ft. pil. ij. h. s.s., mitte xij. Seidlitz powder in the morning.

8. Very much improved in health, and good looks; no pain or discharge; the glossy state of the tongue is fast disappearing; she walks with ease; is about to return home. In case the pills should act too much upon the bowels I have also given her the following prescription:

℞. Ferri sulph., gr. ij.; extr. gentianæ, gr. iij. M. ft. pil. j. o. n.s. Rep. alia.

[She continued the alterative plan of treatment, and in a few months afterwards she became pregnant, but miscarried. Dr. Rigby remarks,]

It is difficult to trace the cause on which this state of oophoritis depended, but there is good reason to suppose that it was contemporary with the appearance of catamenia at the age of seventeen.

The symptoms of oophoritis varied somewhat in this case from the ordinary course, and depended upon the position of the ovary, being much more backward than usual, and almost approaching the hollow of the sacrum; hence she had none of the inguinal pain which is so frequently observed in these cases, but it was confined to the region of the sacrum, as is usually seen in cases of retroversion, and was necessarily greatly increased by the passage of fæces down the rectum. This displacement of the ovary downwards and backwards into the recto-vaginal pouch, when in a more marked degree, forms one of the most agonizing affections with which I am acquainted; the paroxysms of suffering are really frightful, and whilst they last the patient is nearly wild with torture. In three or four cases which I have seen (and of which I regret to say I have taken no notes except of one) the ovary has been found lower than usual, and approaching very nearly to the central line of the sacrum.

The slightest touch produces severe pain, of that sickening and intolerable character which pressure on the corresponding organ of the male produces, especially when inflamed. For want of a better name, I have called it prolapsus of the ovary, but a more correct appellation might probably be found. In the present case, therefore, no movement of the ovary was produced by pressure in the left groin, while the finger of the other hand was examining per rectum, but the anterior wall of the uterus was felt inclining more than usual towards the bladder, as in anteversion, from the uterus being probably pushed somewhat forwards by the ovary behind. The attacks of heat and swelling of the vagina, and the great tenderness of the os externum, were connected with considerable derangement of the assimilating organs, and form part of a series of affections which I have endeavored to describe under the term of uterine gout—the general state of the circulation indicating a close resemblance to that of it in a gouty diathesis, but the affection localizing itself on the uterus and organs belonging to it. *Medical Times, Aug.* 26, 1848, *p.* 265.

[In the next case reported by Dr. Rigby the sterility appeared to be owing to a *contracted state of the os and cervix uteri*, attended, as this state often is, with ovarian irritation or inflammation. The patient was 25 years of age, and had been three years married. The principal symptoms were irritability of the bladder, and severe pain in the right groin and front of the right thigh, with exacerbations at the menstrual periods.]

Examination per Vaginam.—Os externum very small; vagina seems lax; cervix uteri hard and very slender; I feel a minute crevice at its extremity, but can only presume it to be pervious by the history of her symptoms.

℞. Hydrarg. c. creta, pulv. ipecac. co., aa. gr. xv. M. ft. pil. vj. Sumat. ij. omni nocte. Haust. rhæi c. magnesia o.m.

℞. Ung. antim. potass. tart. ℥j.; infricetur paululum om. nocte inguini dextro.

19. Has applied the ointment effectually; the eruption was at its height on the 14th; the ovarian symptoms have diminished, but there is still irritability of bladder. Experienced her first warning pain on the 13th that the catamenia were approaching, which was the day she expected them, but the pain lasted only two hours. It returned every day afterwards, increasing in severity, and accompanied with swelling of the abdomen, until last night, when, in spite of suffering, she determined to go to a ball, and in the act of dancing, which gave great pain, the discharge came on. She considers that the catamenia have appeared this time more easily than usual.

℞. Acidi hydrochlor. dil., acidi nitrici dil., aa. ʒj.; tinc. hyosc., ʒij.; syrupi aurant., ℥ss.; infus. gentianæ c., ℥vij. M. ft. mist. cujus. sumat. cochl. magn. ij. ter die.

23. Quite free from pain. Pergat.; let her rub some linimentum hydrarg. on the right groin every night.

April 20. Has passed the menstrual period with less pain; in other respects feels quite well; has kept up a little irritation in the right groin with the ointment.

22. On passing the speculum a little prominence with a very small orifice came into view, admitting a bougie with some difficulty; a dilator slightly curved was then introduced, and the os uteri dilated to about a third of an inch, without pain, upon which a slight leucorrhœal discharge issued from it; she was directed to lie quiet for the rest of the day; towards evening she had a little pain of the back.

May 4. Appears perfectly well.

Examination per Vaginam.—Os uteri distinctly more open. To allay pain at the next catamenial period, I have ordered her—℞. Extracti lactucæ, extr. lupuli, camphoræ, aa. ℈j. M. ft. pil. xij.; sumat. ij. incipiente dolore et rep. omni bihoris si opus sit.

16. Her report by letter of the last catamenial period is as follows:—"I have felt much pain since I saw you, which was greatly soothed by the pills. The discharge came on this morning in a rush, very suddenly, but now goes on moderately. I still feel in great pain both in back and stomach."

August 10. Has just passed a menstrual period with little of the precursory pain, although she suffered a good deal at the time. Bowels confined.

℞. Extr. aloes aquos. ℈ij.; extr. hyoscyami, ℈jss.; mastiches, gr. xij. M. ft. pil. xx.; sumat. j.—ij. h.s.

This case illustrates the fact which I have repeatedly alluded to, viz., oophoritis, or, at least, ovarian irritation is a frequent attendant upon that form of dismenorrhœa which arises from a contracted os and cervix uteri; the continued repetition of uterine irritation at the catamenial periods, arising from the efforts which the uterus is excited to make for the purpose of expelling the fluid which has been secreted into its cavity, after a time brings on an irritable state of that organ (the ovary), which is so closely connected with the process of menstruation, and in the present instance appears to have been converted into inflammation by the sudden suppression of the catamenia from drinking a draught of cold fluid during their appearance.

The amount of obstruction to the discharge of the catamenia was evidently very considerable, as was indicated, not only by the pain and gradually increasing uterine efforts, but also by the evident enlargement of the uterus from the accumulation of fluid in its cavity. As the distension of the uterus increased, it was stimulated to stronger efforts of contraction, which also being more effective in proportion to the amount of accumulated fluid which it had to contract upon, at last produced a dilatation of the os and expelled its contents. Hence, therefore, the discharge did not appear until the paroxysms of pain had risen to a certain intensity, and then it came suddenly with a gush and greatly relieved her.

Medical Times, *Sept.* 9, 1848, *p.* 302.

148.—ON INFLAMMATION AND ABSCESS OF THE UTERINE APPENDAGES, IN THE NON-PUERPERAL CONDITION.— By Dr. J. H. Bennet, Physician-Accoucheur to the Western Dispensary.

[Dr. Bennet observes that the subject of pelvic inflammation has received much less attention in this country than in France; and that it has been studied in both countries, only in relation to the puerperal condition, with which it has been supposed to be almost always connected. But he has found that, as pointed out by Gendrin, this disease does frequently occur in the non-puerperal state, presenting however, certain peculiarities. He says:]

In the puerperal form of the disease, the uterus itself is nearly always considerably implicated; the inflammation of the ovaries, Fallopian tubes, or cellular tissue, has a tendency to extend to the peritonæum, and to the cellular tissue lining the pelvic cavity; adhesions to the abdominal parieties, abdominal perforations, and even death, not unfrequently occur. In the non-puerperal form, on the contrary, the disease has a tendency to limit itself to the tissues primarily attacked; peritonitis, abdominal perforations, and a fatal termination, being very rarely met with.

[Dr. Bennet first refers to the anatomy of the parts concerned.]

The peritonæum in the female, after covering the posterior surface of the bladder, is reflected on the uterus, covers the anterior surface of the body of the uterus, its posterior surface, and is then again reflected on the rectum. As it passes from the anterior to the posterior wall of the uterus, the peritonæum forms two wide folds, which contain between them the Fallopian tubes, the ovaries, and the round ligaments. The two folds of the peritonæum, which thus, by their juxta-position, constitute the lateral ligaments, are separated one from the other, as also the organs which they contain, by a certain amount of filamentous cellular tissue. This cellular tissue is connected with the extra-peritonæal cellular tissue of the pelvis, although in a great measure distinct from it, and deserve more attention than it has hitherto received, either from anatomists or pathologists. From its cellular nature, it is prone to inflammation and, consequently, it plays a most important part in inflammatory disease of this region. Its physiological use, no doubt, is to allow the folds of peritonæal membrane to separate and glide one over the other, when the uterus increases during pregnancy. The structure of the ovaries is fibro-cellular, while the Fallopian tubes present a central mucous canal, and a cellular investment. Both these organs, therefore, are liable to be attacked by inflammation, as well as the cellular tissue which surrounds them.

We have thus, in the cavity of the pelvis, immediately adjoining the uterus, above the pelvic fascia, between the peritonæal folds, but external to the peritonæum, in contact with the bladder anteriorly, and the rectum posteriorly, a space containing a mass of filamentous cellular tissue—a tissue peculiarly liable to inflammation—and various other organs, also, by their structure, more or less exposed to inflammatory disease. The history of non-puerperal inflammation, in the space thus limited, flows so regularly from the laws of pathology, as applied to the above anatomical data, that it is a subject of surprise to me, that it should not hitherto have been clearly made out.

Seat.—Inflammation occurring in the region which I have described may attack the cellular tissue alone, in which case it is a purely phlegmonous inflammation; or the ovaries alone; or the Fallopian tubes alone; or it may attack all together. In either case, the peritonæum itself may or may not be compromised. Owing to anatomical localization of these organs, to their lying in the same anatomical region, and their having the same anatomical relations, the symptoms and history of inflammation in them are so similar, that it would be difficult, if not impossible, and certainly useless, to attempt to describe inflammation in each separately. I shall therefore treat generally of inflammation in this region, pointing out, as I proceed, any difference which may exist, and which is really susceptible of being appreciated.

The peritonæal folds themselves are very seldom attacked at non-puerperal inflammation of the uterine appendages. When inflammation occurs in this region, *after* parturition, there is a great tendency in the peritonæal membrane to take on the inflammatory action, as is the case when the uterus itself is then the seat of inflammation. In the unimpregnated non-puerperal condition, on the contrary, there is very little tendency to inflammation in the peritonæum, and the organs contained between its folds may remain inflamed during months or years, without its becoming compromised. This is a singular pathological fact, but one which is equally true when applied to inflammatory affections external to the peritonæum, in any other point of the pelvis and abdominal cavities. Even when peritonitis does complicate the attack in the non-puerperal state, it seems rather to have a tendency to localize than to extend its action, the contrary to which obtains in the puerperal condition.

In non-puerperal inflammation of the lateral ligaments, the disease is very evidently limited, in most instances, to the cellular tissue, and to the organs contained within them, and does not extend to the free cellular tissue of the pelvic cavity. This circumstance induces me to think that in the puerperal form the disease is, generally speaking, similarly limited at first; although such is not the prevailing opinion.

[The causes of the disease here treated of are the same as those of acute metritis, arrested menstruation being one of the principal. Its symptoms, too, resemble those of the latter affection; but present, on a close examination, the following points of distinction.]

The pain is greatest at a little distance from the median line, in the right or left ovarian region, more frequently in the latter. If the patient can bear pressure, and the abdominal parietes are not too thick or too rigid, a deep-seated swelling or tumor is frequently perceived in the ovarian or iliac region. Sometimes the tumefaction is perceptible to the eye from the first. The presence, however, of these symptoms is seldom sufficiently conclusive to enable the practitioner to distinguish inflammation of the lateral ligaments from acute metritis.

In order to clear up the doubt that otherwise must necessarily remain respecting the true nature of the disease, it is indispensable that a careful digital examination should be made. This is, in my opinion, effected most satisfactorily, the patient lying on her back, the knees elevated or flexed. The forefinger being introduced into the vagina, the elbow should be depressed, so that, in penetrating, it may adapt itself to the axis of the pelvis. The pulp of the finger may thus be carried underneath and round the cervix, which should be carefully and accurately examined. By then pushing back with the finger the cul de sac of the vagina, where it is inserted on the cervix, the state of the body of the uterus, of the adjoining uterine organs, and of the pelvic cavity generally, may be ascertained with extreme accuracy, especially if the left hand is applied, at the same time, over the lower hypogastric region, above the pubis.

When this mode of examination is adopted in the healthy female, the bladder being previously emptied, the finger may push the vaginal cul de sac before it on the side of the uterus for an inch or two, and may be made to approximate within a very slight distance of the hand applied externally, and that without giving the slightest pain. The practitioner feels, with the greatest distinctness, that his fingers are only separated from each other by the thickness of the abdominal parietes, and by tissues (the lateral ligaments) which present no density or resistance. When the tissues contained in the lateral ligaments, cellular tissues, ovaries, or Fallopian tubes, are inflamed, thickened, and indurated, the state of things is very different. On attempting to push back the vagina, on the side of the uterus, we find an unusual resistance. The vaginal cul de sac has disappeared, and resting on the side of the cervix and body of the uterus there is an indurated swelling, very different from what obtains on the other or healthy side, supposing disease to exist on one side only, as is most frequently the case. Pressure on the indurated tissues is attended with very great pain, and there is a marked increase of the natural heat of the parts. On carrying the finger behind the inflamed tissue, while the abdomen is gently depressed with the left hand, we ascertain that the inflammatory tumor, situated between the hands thus placed, is moveable and quite distinct from the parietes of the pelvic cavity. This tumor is generally applied, as it were, to the side of the uterus, so that it only constitutes one mass with that organ. Thence it is, no doubt, that inflammation in the lateral ligaments is generally confounded with metritis, even when a digital examination is resorted to, and the presence of an inflammatory swelling recognised.

If, notwithstanding a careful vaginal examination, there are doubts as to the nature and extent of the swelling, the uterus and annexed organs may also be examined with benefit digitally, through the rectum.

Lancet, July 15, 1848, *p.* 61.

Acute metritis in the non-puerperal state, generally ends by resolution or by passing into the chronic stage; suppuration is a comparatively rare event, owing to the very small quantity of cellular tissue existing in the structure of the uterus. Inflammation in the lateral ligaments, on the contrary, generally ends in suppuration. It is, in reality, in most cases, a purely phlegmonous inflammation; and the great tendency of phlegmonous inflammation to terminate by suppuration is an axiom in pathology. Although much less liable to end in suppuration than inflammation of the cellular element, ovaritis is also more frequently followed by suppuration than acute metritis. Suppuration may, consequently, be looked for in the course of a few days from the onset of the inflammation, unless the latter has been checked by early and energetic treatment. A prepared and attentive observer may recognise suppuration having taken place by rigors and other symptoms that accompany internal suppurations, by the lull that follows in the general and local symptoms, and sometimes by a deep-seated sensation of fluctuation perceived through the vagina, or even through the abdominal parietes.

Once the pus has formed, being closely confined in the region which has been described, if it is not absorbed, as is sometimes, although rarely, the case, it endeavours to find a vent. Adhesive inflammation connects the phlegmonous tumor with the vagina, rectum, abdominal parietes, or bladder; and in the conrse of a variable period, but generally before the acute inflammatory symptoms have subsided, the pus finds an exit in one or more of these directions.

It is almost invariably by the upper portion of the vagina, or by the rectum, that the pus escapes in the non-puerperal form of inflammation. I can scarcely recal to mind an instance in which I have seen the pus make its way through the abdominal parietes in non-puerperal inflammation, except in a case or two in which there was a serious and permanent cause of disease in the uterine appendages, such as suppurated tubercles. When, however, this *is* the case, it is only after the inflammatory action has lasted for weeks or even months, that the pus reaches and perforates the abdominal integuments; and nearly always, long before the external perforation takes place, it has found its way out of the pelvis through the vagina or rectum. The emptying of the abscess into the bladder is of still less frequent occurrence, and is, likewise, generally preceded by the formation of a vaginal or rectal opening. Sometimes the abscess will open into all these directions successively. In some instances the pus appears to escape from the neck of the uterus, as if the abscess had emptied itself into the cavity of that organ. I think, however, that when this is the case, the real explanation is, that the phlegmonous tumour of the uterine appendages is complicated with metritis; and that an abscess, formed in the walls of the uterus, has thus opened into the cavity of the organ. An abscess primitively formed in the lateral ligament would be scarcely likely to work its way through the thick, unyielding wall of the uterus; at least not unless the uterus participated in the inflammatory action.

Generally speaking, as I have stated, the abscess opens into the vagina or rectum, or into both. That such should be the case is at once accounted for, when we consider the position of the phlegmonous tumour with reference to these organs, with which it is in immediate contact. The perforation mostly occurs during some exertion, such as a fit of coughing, or the act of defecation, and in so latent a manner that it is not perceived nor mentioned by the patient, unless her attention is previously directed to the point by her medical attendant. This, however is seldom the case in non-puerperal abscesses, as he is not himself aware of the nature of the disease, and believes his patient to be merely labouring under metritis. The passage of even a considerable quantity of pus from the vagina is generally thought by the patient to be only an increased flow of the whites; and the escape of pus along with the fæces is still less likely to attract her attention. Women, from a natural feeling of delicacy, require to be closely questioned with regard to utirine symptoms, seldom giving any information respecting themselves spontaneously. Sometimes the perforation is accompanied by a bursting sensation, of which the patient is perfectly sensible. It may take place within a few days of the onset of the inflammation, or it may be weeks before it occurs. The quantity of pus passed varies from a few drachms to a half pint, or more.

It is owing, no doubt, to the formation and escape of the purulent collection from the cavity of the pelvis thus taking place in so insidious and latent a manner, that unless carefully looked for, it is neither perceived by the patient nor her medical attendant, that these cases have hitherto been generally overlooked, and that the more severe forms and instances of the disease have alone been recognized and recorded.

The escape of the pus through the vagina is the most favourable manner by which it can make its way externally. Its presence, no doubt, occasions a certain amount of irritation of the mucous surface over which it passes, but that irritation is scarcely ever considerable. The next most favourable termination is the penetration of the pus into the rectum. When this occurs, there is generally great irritation of the intestinal mucous membrane. Either the ulcerative inflammation of the coats of the rectum, or the presence of the pus. seems to be attended, in most instances, by a considerable degree of dysenteric irritation of the lower bowel, which sometimes lasts several days. In both cases, the openings by which the pus penetrates into the rectum and vagina are generally small. In the vagina, we cannot frequently detect the precise spot at which the pus has perforated the parietes; nor is it easier to discover it with the speculum. An instrumental examination, however is scarcely ever necessary, or even admissible, in the acute stage of this disease, owing to the tenderness of the vagina and internal tissues.

The escape of the pus by the parieties of the abdomen is always preceded and accompanied by considerable inflammatory swelling, and inflammation of the surrounding tissues, and of the abdominal walls. The phlegmonous tumour is a long while in reaching the exterior, and gradually involves all the structures which separate it from the skin; thus giving rise to an extensive inflammatory tumour of a very painful and distressing nature. The sympathetic and reactional symptoms are necessarily very severe in these cases. But the entire series of symptoms, both general and local, which attend the cases in which abdominal perforations occur, may be considered as more especially characteristic of the puerperal form of the disease, as they are scarcely ever met with apart from it.

When the pus has fairly escaped from the pelvic cavity, a marked change is observed in the state of the patient. There is a decided lull in all the symptoms. The deep-seated pelvic pains diminish, as also the abdominal tenderness and swelling, and the febrile symptoms rapidly subside. In very many cases the improvement is so rapid, especially when the abscess has opened by the vagina, that the patient is soon considered quite convalescent, and in hospital practice discharged cured. This improvement, however, although real, is very deceptive with reference to the future. On making a careful digital examination of a patient so situated, we find that the tumor on one side of the uterus is exceedingly diminished in size, that it is no longer so sensitive to the touch, and that there is less heat and tenderness in the upper part of the vagina, and on the side which is in contact with the phlegmonous swelling. But although thus less in size and less inflamed, the inflammatory tumour is, nearly always, still perceptible. Part of it has melted and suppurated, but part remains in a state of semi-chronic inflammation and induration, as is usually the case with suppurated plegmonous tumours.

The symptoms which pertain to a chronic uterine inflammation will, consequently, be found *still* to exist, on a close examination. Pain, heaviness, and bearing-down deep in the pelvis; tenderness, pain, and often swelling, in one or both of the ovarian regions; pain in the lower part of the back; inability to stand or walk for any time, and especially to go up and down stairs—these symptoms may be more or less apparent.

The orifices by which the pus has escaped into the vagina or rectum generally remain open, and thus allow the pus to discharge itself as it is formed. Sometimes, however, they close in the course of a few days. When this is the case, if pus continues to be formed, it collects again, forms an abscess, and, before it again escapes, by ulcerative inflammation, reproduces, generally in a mitigated form, the acute inflammatory symptoms previously experienced.

Were these inflammatory tumours not exposed to the influence of perturbing causes, they would, no doubt, in most instances, gradually become absorbed, and the relapses just described would be slight and unfrequent. Such, however, unfortunately, is not the case; at least in a large proportion of the cases met with. The molimem hæmorrhagicum which accompanies menstruation, or any other exciting cause, may arouse the dormant inflammatory action in the still indurated and tumefied tissues. When this occurs, the acute symptoms of the disease reappear; matter again forms, and forces its way into the vagina or rectum; in the latter case, again giving rise to dysenteric symptoms.

These exacerbations, or returns of acute disease, become less and less frequent, as the inflammatory tumefaction of the uterine appendages diminishes, and as the diseased tissues return to their natural condition. The disease, however, is essentially chronic: and a female who has suffered from inflammation and suppuration of the lateral ligaments, even in its mildest form, may be from several months to one or more years, before all trace of local inflammation has disappeared, and before she can be said to be radically well. During this lengthened period, she is never quite free from symptoms of uterine irritation, and remains subject, at intervals more or less distant, to the acute exacerbations which I have described.

While thus suffering, the menstruation is always more or less modified. Sometimes it is absent for months; sometimes its appearance is only delayed for a few days or weeks. Generally speaking, the menstrual period is curtailed, the quantity of blood lost is diminished, and great pain is experienced during the entire period of the menstrual secretion.

Long before the local tenderness gives way, and before the patient can be pronounced well, all traces of induration or swelling, as appreciated by the touch, either through the vagina, or through the abdominal parietes, will be found to have disappeared. The formation and escape of matter comes to a close at even a much earlier period, before the induration has melted and ceased to be recognisable to the touch.

Such is the succession of morbid symptoms observed in the milder or non-puerperal form of inflammation of the uterine appendages. Although generally overlooked, owing to a want of knowledge of the pathological facts which these symptoms represent, this affection is, in reality, as easy to recognize and to follow, in the evolution of its phenomena, as many better known diseases.

[The prognosis, Dr. Bennet observes, must be guarded, owing to the tedious nature of the disease, especially if suppuration has taken place. As to the diagnosis, he remarks:]

The diseases with which inflammation of the lateral ligaments may be confounded are, more especially, acute and chronic metritis, and inflammation of the iliac fossa. To these we may add inflammation and abscess of the abdominal parietes, metro-peritonitis, ovarian cysts and tumours, and extra uterine pregnancy. The diagnosis must be established on the attentive comparison of the symptoms of each of these diseases with those which the patient presents. If the local examination is carefully carried out, there is seldom any great difficulty in making a correct diagnosis, even when the patient is seen for the first time in the secondary stage of the disease, as not unfrequently occurs. *Lancet, July* 22, 1848, p. 96.

149.—TREATMENT OF ULCERATION OF THE OS AND CERVIX UTERI WITH THE SOLUTION OF GUN COTTON.—By Dr. T. R. Mitchell, Master of the South-Eastern Lying-in Hospital, Dublin.

[After describing the ordinary symptoms of this affection, Dr. Mitchell says,]

The *rationale* of treatment in these cases consists in applying a remedy which will form an artificial covering to the ulcer, and permit of the healing process to go on underneath. The application generally employed is nitrate of silver, either solid or in solution, applied through the speculum to the part. Persons who have extensively used this remedy are aware that it sometimes acts as a caustic as well as by forming an eschar, and that its caustic power is sometimes too great. How often has it happened to me to find acute symptoms arise when I only desired a protective power to be exerted. Reasoning upon the *modus curandi* of this remedy, it struck me that if I could apply an artificial coating to the ulcer which would not possess any irritating properties, that a great point would be gained in the treatment of these distressing affections Having proved the value of gun-cotton solution in various cases of external lesions, I thought it would be of use in those under consideration. I have now given it a fair and impartial trial, and have no hesitation in recommending it as a most useful remedy.

The following is the method I have adopted in its application:—The patient being placed upon her left side, and the speculum introduced, the ulcerated surface is to be wiped dry with a succession of pieces of soft lint until adherent mucus is removed; a camel's hair pencil dipped in the solution is then to be rapidly applied to the ulcerated surface, and allowed to dry, which will occupy a couple of minutes—a second, third, and fourth coating, if necessary, can thus be applied; the first coating is followed by a slight burning sensation caused by the ether, followed by a sensation of coldness from its evaporation. The application requires to be renewed at the end of forty-eight hours, as the secretion collects underneath the varnish, and detaches it. In cases of simple abrasion three dressings have proved successful: in more obstinate cases, and where large granulations have been present, I have used nitrate of silver, acid nitrate of mercury, and potassa fusa first, and then applied a varnish of the gun-cotton over the eschar, and have succeeded in curing extensive ulcers of the cock's-comb variety in half the time I have been able to succeed without the solution.

In cases of vaginitis without ulceration, I have found the painting of the walls of the vagina with the solution most beneficial. The difficulty, however, is to dry it well, which requires time and trouble, but in my mind the result amply repays both, the friction of the surfaces is prevented, and the amount of suffering, pain, and inflammation consequently much diminished.

Dublin Medical Press, Oct. 4, 1848, *p.* 209.

150.—ON THE FREQUENCY OF ULCERATION OF THE CERVIX UTERI.—By Dr. Ashwell.

I may remark, that Dr. Bennet regards 'ulceration of the cervix as common with pregnant women.' This, probably, if at all, is only true of the lowest class of females. My own experience is entirely opposed to such an opinion, as well as to another of the same author, 'that laceration followed by ulceration, is a frequent occurrence in the first stage of labor,'—a statement entirely at variance with the acknowledged fact, that nature has the power to effect the completion of her own work. Nor can I regard with more favour the conclusion, 'that the state of pregnancy predisposes to inflammation and ulceration of the cervix uteri.' It may be so in prostitutes, and patients suffering from primary and secondary syphilis, in whom pregnancy is happily not a common event; and perhaps it may not be regarded as savouring too much of criticism, if I say that many of the observations of the French writers, and even some of our own countrymen who adopt the sentiments of the Parisian school, must be received with great caution in these matters. They are too prone to generalize from the observations they are permitted to make on one section, and that the lowest, in female society. Thus it happens, that the morbid peculiarities of women of abandoned habits are not unfrequently regarded as attaching to the far more numerous class, with whom they have nothing but their sex in common. Hence also the too indiscriminate, and often injurious use of the speculum—the abuse of which has thus far delayed its necessary and justifiable adoption in this country. *Lancet, Sep.* 9, 1848, *p.* 291.

151.—ON TURNING AS A SUBSTITUTE FOR CRANIOTOMY.—By Dr. Robert Collins, Dublin.

[Dr. Robert Collins, of Dublin, in a letter to Professor Simpson with reference to the practice advocated by the latter, says:]

This is unquestionably a dangerous doctrine, more especially when we consider the great facilities which now exisit for throwing the patient into a state of insensibility, which deprives her of the power of either expressing or feeling, the grievous injuries she may sustain from the most barbarous efforts of the unskilled practitioner, the after-consequences of which must, in a great proportion of cases, be calamitous.

That a degree of force totally inconsistent with sound practical knowledge, must be used, (after the very hazardous operation of turning is effected,) to get the child through a deformed pelvis, where in very many instances, even after the head is lessened, great difficulty is experienced, is obvious; and where such disproportion between the child and the pelvis exists, it is equally obvious the child cannot pass alive. Need I state to any physician of practical experience, the awful mortality which must inevitably occur to the mothers, when delivery is effected by such measures, compared with what I have so fully recorded of the practice you propose to alter.

Of 16,654 births in the hospital, delivery was effected in seventy-nine by lessening the head, on account of *extreme* difficulty in the labour; or where the child was *dead*, and interference desirable, owing to the state of the mother; in six of the seventy-nine, delivery with the forceps was attempted, but no force consistent with safety could accomplish it. *Fifteen* only of the seventy-nine women died, and in *none* of the fifteen was death caused by any injury sustained in the actual delivery. The proportion of such deliveries, as I have fully stated, is greatly increased in hospital, by the same patient returning *two*, *three*, or even *more* times, in whom, from deformity or other circumstances, such mode of delivery is unavoidable. Another cause which *greatly* increases the proportion, is the *frequent* admission of patients after having been *two*, *three*, or *four* days in labour, and as the record of the cases shews, most of whom had been grossly mismanaged. Of 106 cases where the children were *still-born*, and the labour severe, nearly *one-half* were of this description.

It is a remarkable fact, that of the examples given by me, at page 487 of my "Practical Treatise," of *repeated* delivery of the same patient by the crotchet, but *one* woman died, thus satisfactorily proving, that where *death* succeeds this operation, the fatal result is not dependant on the mode of delivery, but upon the circumstances demanding such interference.

No theoretical reasoning, nor any other argument, without the *test* of *practical experience*, could for one instant cause me to listen to a statement to the effect, that if the children *had been turned* in the seventy-nine most trying and critical cases I met with, the results would have been more favourable; nay, I shudder at the thought.

What *test* could we have to place in opposition to what I call the *astounding practical fact*, that out of ALL the PROTRACTED, LABORIOUS, and TRULY DIFFICULT labours, where *delivery* was *effected* by the crotchet, in the unprecedented number reported, of sixteen thousand six hundred and fifty-four births, only *fifteen* proved fatal? Why is this simple and *overwhelming truth* not stated by you simultaneously with the theoretical data you have given to support the statement you have made, that where the labour exceeded forty-eight hours, one patient in *three* died? Why did you not likewise state that only *eleven* patients died who were above forty-eight hours in labour out of the 16,414? Was it not imperative upon you to do so, as from your PROPORTIONAL extracts you have left your readers in total *ignorance*; for instead of the deaths being the *marvellously* small number of fifteen out of 16,654 births, your observations are of so truly dismal and feeling a character, that those who had not the clear statement I had given on the subject, which you had before you in my work, must unquestionably conclude the mortality from PROTRACTED labours, in which the crotchet was used, *frightful* indeed. I have little doubt, however, most practical physicians will agree with me, that the simple truths here stated remove the visionary gloom cast over your words.

I have still further given accurately the CAUSE of death in each of the fifteen women who died, from which it appears that out of the fifteen, *five* died from the effects of labour *previous to admission*, and are therefore not justly to be reckoned in the hospital practice; *five* from causes not the result of *protracted* labour, and two from the effects of *hemorrhage*, where *the hand had been passed into the uterus;* so that it is *thereby demonstrated*, that in the *total* number of the most trying and hazardously-protracted labours met with in the *vast* number of 16,654 births, we have, I fearlessly designate it, the INCREDIBLE MORTALITY of THREE patients, and this under the treatment which you fancy you could improve, but in support of which improvement you have so little practical experience of your own to submit to the profession.

I have stated in my introductory observations on tedious and difficult labours, that there is no subject connected with the practice of midwifery so difficult to acquire a sound knowledge of, as the treatment of tedious and difficult labours; it is one of the most vital importance, and, in the most marked manner, distinguishes the experienced, from the inexperienced, practitioner. This information can only be obtained by diligent and persevering attendance at the patient's bedside: all other sources are comparatively worthless, and when not conjoined with practical experience, dangerous. I think it necessary to repeat the above declaration, as from the opinions you express, your readers might hastily conclude that I had no knowledge whatever of the danger of protracted labour, whereas there is no subject has caused me greater anxiety, or occupied my thoughts more.

My statements have invariably been made strictly in condemnation of *rash* and *hasty* measures, in order to prove, that where the patient is properly treated during the pregress of labour, the *mortality* from the effects of *protracted labour* is strikingly small; and I do not think it possible to submit facts more unquestionable for the satisfaction of my professional brethren than I have done. Even supposing the entire fifteen women who died after delivery with the crotchet, to have died from the effects of protracted labour, this would only amount to the *one-eleventh* part of the mortality from *other* causes; but as I have shown only *three* of the number can fairly be so attributed, the proportional mortality is reduced to one in fifty-four.

The strong observations I had before made upon this deeply interesting subject, and published in the *Dublin Journal of Medical Science* for March, 1837, and some of the succeeding numbers, to which I would specially refer, were made, as you are well aware, to counteract the *hasty*, and if generally acted upon, *mischievous measures*, urged at that time by the late Professor Hamilton, for the *artificial dilatation* of the mouth of the womb within twelve or fourteen hours, and the *actual delivery* of the patient within twenty-four hours from the commencement of labour.

I now apprehend, if possible greater danger, should your theoretical proposal be acted upon, and as it holds out the very strong inducement, of at once relieving the practitioner from the fatigue of a protracted and anxious attendance, the thoughtless or careless might possibly be unable to resist this great temptation, if not *forewarned* of the fatal consequences to both mother and child.

Of the fifteen cases of protracted labour we have recorded, which proved fatal, *fourteen* were delivered of *first* children, all *males*, which clearly points out the greater size of the *male*, and greater ossification of its head, as one of the chief difficulties to be encountered. How can any practitioner pretend to know, in the *early* stage of a *first* labour, (except where the diminution is extreme, which is rarely to be met with,) whether the pelvis be of such a size as to permit the head to pass, or whether the ossification of the head be such as to yield to the force of uterine action?

We totally disbelieve in the *accuracy* of the minute measurements given by some writers of the brim and outlet of the pelvis in the living subject; and even were we certain of its capacity, a child of 7 lbs. or 8 lbs. weight would pass with *facility*, where one of 10 lbs., 12 lbs. or 13 lbs. could, by no *possibility*, be delivered without diminution.

To turn a child in the *early* stage of a *first* labour, where we can have no knowledge as to the practicability or the impracticability of the natural effort to accomplish the delivery, is in my opinion wholly unjustifiable. Our registry *proves* that the mortality is confined to *first* pregnancies, where there has been no previous knowledge of the capabilities of the pelvis, and where, under ordinary circumstances, the rigidity of the soft parts renders turning hazardous to both mother and child; but where deformity of the pelvis exists, or where the child is extremely large, as is invariably the case in very protracted labours, the results must be disastrous. I venture to prognosticate, that out of 79 such *trying* cases as we have reported, the mortality instead of 15, would be much nearer to one-half of the total number of mothers; and a living child would be a rare event. Over and above the sad evils resulting from its adoption in *really laborious labours*, we shall have innumerable bad consequences from the turning of the child, in order to *expedite* the labour, *where no deformity or disproportion whatever exists.* In truth I see no limit to such mischievous proceedings, where chloroform is used, and the attendant is not conscious of the real dangers of turning the child.

Perhaps you are not aware of the *fact*, that in hospital, when puerperal fever prevails, the introduction of the hand into the uterus for *any* purpose, is usually followed by the most fatal results,—so much so that few escape. This should be carefully recollected, and when a tendency to puerperal peritonitis exists out of hospital, the risk is very great.

I shall now notice your statement that "the infantile mortality attendant upon parturition increases in a ratio progressive with the increased duration of the labour."

In reply to this theory, I shall only state the simple truth which you have *omitted*, that out of 1045 cases of still-born children accurately noted; *eight hundred* and *forty-four* were delivered within *twelve hours*, and *nine hundred* and *thirty-two* within *twenty-four* hours; and I have added that the death of the child *subsequent* to birth, except in *very few* instances comparatively speaking, was not a consequence of injury arising from *protracted* labour; for of the 284, which was the *total* number of deaths, previous to the mother leaving the hospital, the labour in 246 did not exceed *twelve hours*. These unquestionable facts extinguish all speculative theories. I have also stated, when we consider the class of patients admitted into the Institution, where *extreme* poverty is the only passport demanded, and the *very great number* admitted after having been *one*, *two*, *three*, or *more* days in labour, most of whom are grossly mismanaged,—besides the numerous cases sent in actually *almost dead*, as the reported cases witness, the success of the treatment pursued will be still *more* apparent.

That your opinion should totally disagree with mine on the advantages to be derived from the use of the stethoscope as a means of ascertaining the life or death of the child, *in trying cases of protracted labour*, is what I had no doubt of; and when you state the mighty boon which ausculation offers us in such cases to be, the delivery of the infant with the *long forceps* so as to *preserve* its life, few will wonder at our disagreement! Had I not made a better use of this invaluable assistant in the 79 cases we met with, the mortality would not have stopped at fifteen nor twice that number.

I could not picture to my mind a greater outrage in practice, than the attempt to drag a child through a deformed pelvis, or an extraordinary large child through an ordinary pelvis, with the long forceps, *more* especially as I have proved that the most trying cases are met with in *first* labours, where no relaxation of the soft parts can take place so long as the head remains at the brim of the pelvis; also, that in most laborious labours the pelvis measures little more than *three* inches from the pubes to sacrum; in others less than this; and that when we consider the blades of the smallest sized long forceps used in Britain, even when *completely closed*, measure from 3⅛ inches to 3¼, it is clear that were the bones of the pelvis denuded of their *soft parts*, there would not be space to admit of their application. Your observations upon my recommendation of the use of the forceps in prolapsus of the umbilical cord, when *the child is so situated as the head can be reached with safety*, are strongly misapplied, as in the one case there is ample space to use the instrument without injury to either mother or child, whereas in the other I have already shown this to be impracticable, without exposing the patient to unjustifiable danger. It is to be supposed, if you had not some experience of the mischievous effects of the long forceps under such circumstances, you would not now be so anxious to abolish the use of them; but as we say in Ireland, you have leaped "out of the frying pan into the fire."

As you so fairly state that I am the only writer who furnished the profession with data showing the duration of labour, either in natural or operative cases, and that my "Practical Treatise on Midwifery" is a work, the great value and candour of the facts contained in which it would be difficult to overpraise, I would solicit from you, in return for the information which cost me so much labour to supply to my professional brethren, that henceforth, and upon all occasions, either in your lectures as a University Professor, or in your writings, you would plainly state the *total* number of cases under each head you refer to, and at the same time give the *No. of the case* which is *affixed* to each, in order to enable the profession to judge for themselves of the correctness of reference.

I would also *claim* from you, as a reward for my industry, that when you refer to the mortality of the patients under my care, and recommend a *different* mode of treatment, you would honourably state, that Dr. Collins' practice, which you propose to improve, is much the most successful on record, as you know of no report of 10,785 cases, with a mortality so small as *one* in *one hundred and eighty-six*. This is only an act of *simple justice*, and I should not object to your *then* adding, "if Dr. Collins had adopted *my* treatment, *none* of the patients would have died."

Prov. Med. and Surg. Jour., Oct. 10, 1848, *p.* 572.

[In another number of the Provincial Medical Journal, Dr. Simpson answers Dr. Collins, showing, and we think very satisfactorily, that Dr. Collins is wrong in his statistical calculations on this subject. Dr. Simpson says,]

One fundamental mistake in your statistics and calculations has led you into all your numerous errors and inaccuracies relative to the effects arising from the morbid protraction of labour. This error has made you repeatedly express and maintain, as the supposed result of your own facts and experience, opinions which your own facts and experience, when properly interpreted, totally and altogether contradict.

The error which I allude to is this: in calculating from your experience of 16,414 deliveries, the effects upon the maternal mortality of morbid prolongation of the labour, as a special or individual complication, you calculate the resulting number of deaths in relation to the total sum of all the cases delivered, (16,414,) instead of calculating them in relation to the total sum of all the cases merely that were protracted. You calculate the effects of the complications relatively to the whole number of cases of delivery, instead of relatively to the whole number of cases of this special complication, (protraction.) An example may illustrate my meaning. I shall take it from the subject of rupture of the uterus and vagina.

During your seven years' Mastership of the Dublin Hospital, thirty-four cases of rupture of the uterus and vagina occurred, and thirty-two of the mothers died; two only of the thirty-four survived. If asked whether rupture of the uterus were a dangerous complication or not—whether the mortality attending upon it was "strikingly small or strikingly great," what answer would you return? If you argued and answered upon this special complication as you do with regard to the special complication of protraction, you would maintain that the mortality from rupture was strikingly small; for only thirty-two mothers out of 16,414, or about one in every 513, died of it. This would show, certainly, the proportion of deaths from rupture in relation to the total sum of all the cases delivered; but it would not show what was wanted, viz., the proportion of deaths from rupture in relation to the total sum of all the cases in which rupture happened. If you wished, in short, to state the real risk and danger attendant upon this special complication, (rupture,) you would state that thirty-two mothers died of it out of thirty-four cases in which it occurred, instead of stating that only one in 513 died of it. And, exactly in the same way, if asked what was the degree of maternal risk and danger attendant upon another special complication, viz., protraction of labour beyond twenty hours, your answer on the same principle should not be as you have it—forty-two deaths in 16,414 labours, or in the proportion of one in 391; but forty-two deaths in 452 labours, (the *whole* number protracted beyond twenty hours, or one death in every eleven cases of labour prolonged to this amount of protraction.

Ask any intelligent actuary, or any medical friend acquainted with the principles of statistics, and they will perhaps convince you more than any more lengthened remarks of mine would, respecting the errors you have committed on this, and on various other analogous statistical questions.

[If the reader has not read Dr. Simpson's interesting paper on this subject, he will do well to refer to it in our last Retrospect.]

Provincial Medical and Surgical Journal, Nov. 1, 1848, p. 601.

152.—ON THE APPLICATION OF THE LONG FORCEPS.—By Dr. J. Y. Simpson, Professor, &c.

[Dr. Simpson decidedly prefers the use of the long forceps to the employment of craniotomy, in the majority of cases where these modes of delivery come into competition. He gives the following directions for their application:]

In their modes of application, the long forceps differ from the short. The short forceps are applied always to the lateral surfaces of the child's head, in whatever position the head may be. Generally, the long diameter of the head lies in the right diagonal diameter of the pelvis; and, consequently, the short forceps are placed in the opposite or left diagonal diameter; or, in other words, at right angles to the long diameter of the head. The mode in which the long forceps ought to be applied, and are really applied in practice, has given rise to considerable difference of opinion.

If the long forceps are ever, for inertia, hemorrhage, or other such complications, in any case applied while the head is passing through the brim, and the brim and head are natural in size, the instrument may be perhaps applied, like the short forceps, directly to the lateral surfaces of the child's head. But the common reason for the employment of the long forceps, is morbid contraction of the brim of the pelvis in its most general form, and from its most general cause, viz., in the conjugate or antero-posterior diameter, from projection forward of the promontory of the sacrum. How are the long forceps applied when used in this, the case in which they are most generally had recourse to in practice? It is first requisite to state, that under this complication the child's head is found situated in the brim, with its long or fronto-occipital diameter lying in the transverse diameter of the brim, or with the forehead looking to one ilium, and the occiput looking to the other. In other words, the long diameter of the head is not placed, as usual, in the right diagonal diameter of the brim, but more in its transverse; for where the promontory of the sacrum forms a morbid projection, the transverse forms the longest diameter of the brim, and, consequently, the one in which the child's head comes to be placed by the uterine efforts. The face or forehead looking to the ilium, and the occiput to the other ilium, the lateral surfaces of the child's head come to be compressed between the protruding sacral promontory and the interior of the symphysis pubis. Now, in seizing the head in this case, some authors aver, that,

1st. The blades of the long forceps are placed, as in applying the short forceps, on the lateral or aural surfaces of the child's head, and consequently with one blade in front of the sacral promontory, and the other behind the symphysis pubis. Burns, Dewees, &c., speak thus of applying the long forceps in the conjugate diameter of the brim; and Dr. Churchill has published a woodcut representing this as the actual method of their application in practice. But its application in this position is impossible in the very cases in which the long forceps are generally required, viz., where the conjugate diameter is contracted, for there is not room for the additional thickness of the blades of the instrument; if applied, they add to the thickness of the head in that one diameter and place in which it is already too thick and large; their pressure would greatly endanger the urethra and bladder in front, and the soft structures placed over the promontory of the sacrum behind; and they could not thus be placed in the axis of the brim, in consequence of the pressure of the perineum upon the instrument below. Other authors aver, that,

2. The blades of the long forceps should be placed over the occiput and forehead or face of the child, and consequently in the transverse diameter of the brim. This is the view of their mode of application taken by Deleurye, Davis, &c., &c., and approaches much nearer the reality than the former opinion; but that it is not strictly true, is shown by the marking of the place of application of the blades of the instrument after the child is born, and by a more attentive consideration of the mechanism of such labours. One blade is found to have been placed behind one ear, and the other to have pressed upon the side of the forehead, temple, or region of the eye; but these would not be the places of the markings of the blades, if they were applied in the transverse diameter, upon a head placed directly transverse. Dr. Ramsbotham has published a beautiful plate of the mode of application of the long forceps, and has given an excellent chapter on the subject in his work on midwifery. He correctly represents in the plate the anterior blade as placed upon the side of the forehead and eye-brow; but in order to give this view with the forceps placed in the transverse diameter of the brim, he has been obliged to represent the face as turned backwards, while in reality, in morbid contractions of the conjugate diameter of the brim, it is actually turned laterally; and he places the long diameter of the blades of the forceps so as to transverse the right oblique instead of the left oblique pelvic diameter.

3. The blades of the long forceps should, I believe, be placed obliquely upon the child's head—one, the posterior, over the side of the occiput; and the other, or anterior, over the side of the brow or temple, and consequently should be situated in the oblique diameter of the brim. The markings on the child's head after birth always show this mode of application of the instrument: when properly applied upon the mother, and when their situation relative to the pelvis is examined, they are found to have assumed this position; and in experiments with the instrument (when the head of a dead child is fixed in a pelvis with a contracted brim), this is the position and relation which the instrument will be seen to assume with relation to the infantile head and maternal pelvis. Besides, in thus placing the instrument, while we incur less danger of injuring the urethra and other important parts, we place the blades of the instrument in exactly those parts of the pelvic circle where there is least pressure, and consequently most room for them. t is apparently in consequence of misconception on this point, that some

authors have come to prefer the use of the perforator to that of the long forceps. Dr. Collins, for example, argues that when the head is detained in the pelvic brim, the brim "measuring little more than three inches from pubis to sacrum," there cannot possibly be space for the long forceps even were the bones denuded, seeing that the blades of the smallest sized forceps used in Britain, even when completely closed, measure from 3½ inches to 3¾. "How (he adds) is it possible with the forceps to drag a child through a pelvis where there is not space, except by force, to introduce, as is commonly said, a straw, or where the smallest flexible catheter cannot be passed in some instances into the bladder?" These and such opinions proceed on the erroneous idea, that the long forceps are to be applied, within the pelvis, at the parts or in the diameter in which the pelvis is *most* contracted, and they suppose that the head when fixed in the pelvic brim fills completely the *whole* circle of the brim. The usual shape of the morbidly contracted pelvic brim is cordate, or rather elliptico-cordate, but the child's head is not of this shape; it is ovoid, and consequently when applied to the cordate brim leaves unoccupied spaces. The most unoccupied spaces before and behind are at the extremities of the oblique diameters of the brim, where sufficient room is left for the passage of the blades of the forceps, and in these points they are passed when properly applied.

Monthly Journal, *Sept.*, 1848, *p.* 193.

153.—ON TURNING AS AN ALTERNATIVE FOR CRANIOTOMY.—By Dr. J. Y. Simpson, Professor of Midwifery in the University of Edinburgh.

[Is the practice of turning as an alternative for craniotomy and the long forceps in deformity of the brim of the pelvis, &c., incompatible or not with the safety and life of the child in consequence of the compression of the cord? This important question is answered by Dr. Simpson in the Provincial Journal for July. In our long abstract of Dr. Simpson's papers in Retrospect, Part XVII., p. 260, the present paper came out too late to be introduced into that Part—we therefore give it here. Dr. Simpson says:]

In speaking of the propriety of delivery by turning in the class of cases for which I have proposed it, Dr. Radford states as an objection to it, the danger and death to the infant from pressure upon the funis, and consequent obstruction of the umbilical circulation. In footling presentations, "the funis (he observes), is subject to fatal compression:" and he imagines this danger must be greatly increased in cases in which the child has been turned, on account of distortion of the maternal pervis.

Perhaps the proper and the most direct answer to this, as to the other objections to turning, drawn from supposed dangers to the child, is simply a reference to the actual results of the cases which I have already quoted, and may yet have occasion to quote in the sequel. In many of these the child will be found to have passed or been drawn footling through a contracted pelvis, and yet, in despite of the alleged fatal danger of compression of the funis between the body or head of the child, and the interior of the maternal passages, the infant *has* been born alive. The infant has been subjected to the alleged cause of danger and death without the alleged effects following; and hence we are surely entitled to conclude that the influence of the cause is not so likely to interfere with the operation of delivery, as has been theoretically pre-supposed.

Let me not be misunderstood. I by no means wish to argue that in turning in distorted pelvis there is no danger to the child from umbilical compression, for I believe quite the reverse; but I imagine, at the same time, that on first thinking over this undoubted source of danger, we are apt in our own minds to magnify its effects. Experience, as I have just now stated, teaches us that they are not so great as theory might lead us *a priori* to believe; and when we consider the subject for a moment, we shall find, I think, sufficient reason for seeing,—1st, that the risk and occurrence of umbilical compression in footling presentations and turning is not so very great as to invalidate the practice, and it is in part averted by the very form of distortion to which the pelvic brim is most usually subject; besides, supposing, 2nd, the compression to take place, there may still, I believe, be measures in the resources of science, by which, if we cannot now avert the occurrence of compression of the cord, we may prevent at least the more dangerous consequences of the complication for the child. I shall speak briefly of each of these points.

[Dr. Simpson goes on to show that the danger and mortality from compression of the cord is not so great as to invalidate the practice of turning, and next proceeds to speak of the]

Arrangements and Means by which Compression of the Cord, in its effects, may be averted.—Dr. Radford believes that when the child is extracted by turning on account of distortion of the maternal pelvis, the danger of fatal compression of the umbilical cord is then greatly increased by the fact of the distortion. But the common variety of contracted pelvis requiring turning is, (as I have already stated, and will insist upon more afterwards,) the peculiar and common kidney-shaped distortion of the pelvic brim, which is produced by the anterior prominence and projection of the sacral promontory. When the fœtal head enters it, as it does under extraction by turning, with its long or occipito-frontal diameter lying in the transverse diameter of the brim, then we have a free space left of greater or less size between the face or forehead of the child, and the ilium to which it looks. In this space, sufficient room may certainly, in general, be found for the free lodgment of the cord without injurious compression. The very narrowness of the conjugate diameter of the brim prevents this space being entirely filled up and encroached upon, by preventing the great mass and breadth of the head (from the coronal suture backwards,) from further passing over to this partially-occupied side of the pelvis. Besides, this uncompressed lateral space is the very site along, or near which the cord necessarily passes in descending from the uterus, and stretching between the placenta and umbilicus. For the anterior surface of the abdomen of the child to which the lower end of the cord is attached, always, of course, looks to that side of the pelvis to which the face is directed, and it is on that side that we have the free and uncompressed space I speak of, as fitted for the safe transit and lodgment of the cord. In thus stating the space as free and uncompressed, I mean in so far as the adjoining opposite surfaces of the child's head and interior of the pelvis are concerned. The space itself may be filled up, or the cord in it pressed upon by the circle of the cervix uteri or other soft parts; but certainly a little adjustment and management may often prevent any fatal compression from these sources. For the cord may be carried round by the accoucheur to that point in which there appears the greatest space, and consequently, the greatest freedom from compression, and he may sometimes defend it from the pressure of the cervix by allowing it to pass between two fingers, introduced either for the sole purpose of protecting it, or with the view of simultaneously assisting the extraction of the head by applying some force to the cheeks or lower jaw. In both natural and artificial footling presentations it has even been proposed to defend the cord more methodically by shielding and enveloping it at the part liable to compression in a kind of special protecting instrument. Dr. Joos, of Schaffhausen, has ingeniously proposed an instrument for this purpose. It consists of a tube from four to eight inches in length, and of calibre sufficient to contain the umbilical cord, leaving a longitudinal slit or fissure equal to 1-12th of its circumference. It is composed of caoutchouc or leather, in which are embedded a series of steel rings three lines broad, and at the distance of one line from each other. The slit is opened up at one end by the finger, so as to admit the umbilical cord, and in the same manner it is made to receive it along its whole length, the fissure closing up as the finger is removed. A handle may be required subsequently to keep the instrument in its proper place. "The application of the instrument" (says Dr. Joos,) "takes place during the act of birth, by presentation of the breech or feet, in cases where delivery is effected by version and bringing down the feet, and in cases where the cord is prolapsed and cannot be returned." But I greatly doubt whether, even if we were provided with such an instrument, as Dr. Joos describes, we should not find the difficulties of applying it, and the time required for that purpose, more dangerous to the infant, than the extraction of the child's head by more simple and direct means. It is always well to avoid instruments when we can avoid them, and such an one as the present might not be used without some danger to the structures at the os uteri.

Suppose, however, that the means we used to avoid compression of the cord, by placing it in the least occupied point at the brim, or by preventing the soft parts pressing upon it by the fingers, or otherwise, were in vain, and that at last it really became irretrievably compressed, and its pulsations arrested before the head could possibly be extracted, is the safety of the child utterly hopeless? I believe not. Long ago, Pugh and Morlanne recommended a practice that has been latterly followed by Bigelow and others, and which, I believe, is calculated in some instances to enable us to continue the life of the child, by continuing its respiratory function, while we go on exerting, from time to time, those cautious, yet decided means, which we have seen Dr. Denman recommending, for effecting the complete extraction of the obstructed head. The means to which I allude, consist in exciting pulmonary respiration in the half-born child, now that its placental respiration is stopped, and in making it continue that vital process by the action of the lungs, now that it is prevented from being exercised, by the medium of the placenta and umbilical cord. "When the parts are well made," says Pugh, "and the child in proportion, happy the case! It will come then any way; the arms being brought down, the head only remains to be extracted, which must be done with as much expedition as possible, as indeed the arms ought to be; for, consider, when the child has passed the navel, the circulation between it and the mother is stopped from the pressure of the umbilical rope; you must then introduce the fingers of your left hand into the vagina, under the child's breast, and put the first and second fingers into the child's mouth pretty far; so far, however, that you are able to press down the child's tongue in such a manner, that by keeping your hand hollow, and pressing it upon the mother's rectum, the air may have access to the larynx; you will soon perceive the therax expand, as the air gets into the lungs. By this method (he adds) of giving the child air, I have saved great numbers of children's lives, which otherwise must have died."

Acting on the plan thus suggested by Pugh, we may, in some cases, be able, with a little management, to change thus the respiration of the infant from its intra-uterine to its extra-uterine type, though the head were still held and arrested at the brim; for the mouth of the infant is always then within reach, and could, I believe be used for the purpose of admitting a proper quantity of air into the pulmonary passages, even when the great bulk of the head is still held above the brim. It is a practice, at all events, which sometimes succeeds sufficiently well when the head is down in the pelvis, and we have all the difficulties of a rigid outlet and perineum to contend against, in our attempts either to extract the head, or to admit a sufficiently free access of air to the mouth of the fœtus.

[He advances the two following cases from Dr. Lee's Clinical Midwifery, as illustrative of his views :]

Case 32.—The nates presented, the trunk and extremities were extracted, "but the head could not be drawn through the external parts, from the rigid state of the perinæum; and the pulsations of the cord were becoming more and more feeble. So great was the resistance of the perinæum, that it was impossible to overcome it without destroying the child. I pressed back its edge, however, so far, that the external air could enter the mouth of the child, and it respired in this way fully twenty minutes after the pulsations of the cord had ceased. In spite of all our care, the edge of the perinæum gave way as the bulky part of the head passed through the external parts, but the child sustained no injury, and continued to live."

Case 33.—I attended a lady in her first labour, on the 22nd October, 1837. The nates presented, and the cord ceased to pulsate after the trunk and extremities of the child had been extracted. The perinæum was so rigid, that the head could not have been delivered without using so much force, that the parts must have been torn, and the neck of the child injured. I held the body of the child as far forwards as possible, while Dr. H. Davies assisted me in holding back the perinæum, that the air might enter the mouth of the child. The respiration went on for nearly half an hour before the head could be safely drawn into the world, and during the whole of the time there was no pulsation in the cord. The child is alive, and the perinæum was not injured.

The child may not only be able to breathe, but even heard to cry, with the head still unborn, when this form of treatment is adopted. In his paper on the subject, published in the *American Journal of Medical Sciences*, for 1829, Professor Bigelow states, among others, the following case:—

Case 34.—In a case of arm-presentation, in which the feet were brought down, and the body delivered, "the face turned towards the perinæum, the mouth was easily reached, and the fingers were opened to give passage to the air as before described. No struggle nor attempt at respiration, however, occurred. A handful of cold water was then dashed upon the body, upon which the child immediately gave a spring, and began to cry. The head was not delivered till some minutes afterwards."

In his observations and directions upon this modification of practice, Dr. Bigelow observes:—"After the body is expelled, if the head can be seasonably delivered, either by the recurrence of pains, or by the successful efforts of the practitioner, no difficulty ordinarily occurs. But this desirable state of things cannot always be realized; too frequently the size of the head, and the resistance of the pelvis or soft parts, renders the delivery difficult or hazardous, and the practitioner, in the midst of his efforts, is apprised by a convulsive jerk, or spring of the body, that a state of extreme danger exists, and that the time has come at which the child must breathe, or will speedily die."

If at this period the fingers be introduced so as to reach the mouth of the child, it will be perceived that each jerk of the body is attended with a gasp, and convulsive effort at inspiration, performed by the mouth and chest of the child. In this state of things, if air be conveyed to the mouth of the child, it will immediately breathe, and the efforts of nature, as will hereafter be shown, may, in most cases, be safely waited for to assist in expelling the head."

"The method to be pursued," he continues, "in conveying air to the mouth, depends upon the situation of the head. If the chin has descended low in the pelvis, so that the mouth rests upon the perinæum, or lower part of the sacrum, and can be readily reached by the fingers, the hand of the operator alone is sufficient to give the assistance required. But if the mouth is situated so high in the pelvis as to be reached with difficulty, or if, from the large relative size of the head, there is much compression, the assistance of a tube may be of use. The mode of proceeding which I have found successful in various instances, is as follows:—As soon as the body and arms are extracted, supposing the face to be towards the sacrum, an assistant supports the body, carrying it towards the pubis; or the reverse, should the position of the face be to the pubis. The accoucheur should then introduce the hand to which the face looks, till the middle fingers rest upon the mouth of the child; the hand is then to be raised from the throat of the child, making the ends of the fingers a fulcrum, and pushing the perinæum backwards; the air will thus pass upwards as far as the chin of the child; the middle fingers are now to be separated about half an inch from each other, and thus a complete passage will be formed between them, by which the air will reach the mouth of the child. If the child be in a healthy state up to this period, it will immediately breathe and cry, and the delivery of the head may be safely postponed till the natural pains recur. If, from any degree of asphyxia, the child does not immediately breathe, it may often be made to do so by dashing cold water upon the body, or by other stimulating processes. It has even appeared to me practicable to inflate the lungs in some cases, through an elastic catheter. When the mouth is so high in the pelvis as to be reached with difficulty, or when the compression is so great as to obliterate the cavity between the fingers, a flat tube will be found useful, made of metal of spiral wire covered with leather, or of elastic gum, and having its largest diameter about half an inch. If the tube be of metal or any incompressible material, it should be withdrawn during a pain, to prevent contusion of the soft parts, and immediately replaced, if the pain subsides without expelling the head. Such a tube may be considered as a prolongation of the trachea, and is fully sufficient to sustain life by respiration for a considerable time. The tube must be guarded and directed by keeping it between the fingers of the inserted hand.

If all the preceding measures fail to avert compression, there is always still one strong hope left, namely, that if after complete compression of the umbilical vessels has occurred, no very great length of time is lost in the extraction of the head, the child may yet be born alive. For the type of vitality in the unborn infant is such that it will often survive, and be capable of being resuscitated, although the placental respiration be arrested for several minutes before its actual birth. And with others, I have been repeatedly surprised, in such cases as we are considering, both at the great amount of extractive force which the structures of the infant will sometimes undergo without life being destroyed, and at the apparent great length of time, during which, in making these extractive exertions, the infant will still survive, and that too although the cord was compressed during their continuance. If the infant be perfectly viable, and its heart sounding normally at the time that turning is adopted, there are perhaps comparatively few cases in which it will be requisite to expend so much time upon the forcible compression and extraction of the head as to destroy during that time the child's life by simple compression of the cord alone.

Prov. Med. and Surg. Jour., July 26, 1848, p. 393.

154.—CASES OF TORSION, DOUBLING, AND EXPULSION OF THE FŒTUS, IN SHOULDER PRESENTATIONS.—By Dr. T. RADFORD, Manchester.

[Dr. Dadford was sent for to a woman in labor of her fifth child, under the care of a midwife; she had been in labor for twenty-four hours, and had frequent and powerful pains. Dr. R. says:]

On a vaginal examination, I found the right hand down, and the entire arm protruding out. I felt the scapula placed forwards, and the clavicle resting firmly against the upper portion of the left descending ramus of the pubis. I could readily trace the ribs bulging downwards; the child lay obliquely, with the breech towards the right sacro-iliac junction. Having determined to turn the child, I first gave a drachm of laudanum, and quickly abstracted about eighteen ounces of blood. The pains were still very powerful. I now passed the right hand into the vagina, and onwards as far as possible, but I found the child so forcibly wedged in the pelvis, and the uterus so strongly contracted on it, as to completely oppose my efforts.

I however tried again, and used as much force as I thought justifiable. I now perceived that the ribs further descended, and came to press on the perinæum. The arm still remained fully protruded, and, if anything, the clavicle was pressed more firmly against the pubis. A very strong pain now occurred, during which I felt another part of the child coming along upon the perinæum, and which I took for the breech. The uterine contraction continued very strong, and being assisted by the voluntary efforts of the woman, soon completed the expulsion of first the breech, and successively the thighs, abdomen, chest, and lastly, of the head with the left arm. The right arm, during the whole of the process, remained *fixedly stationary*. The perinæum was enormously distened (as may be readily supposed) during the progress of the breech between it and the chest of the child, but fortunately, it safely yielded to the pressure.

The child, full sized, appeared to have recently died, and from the mother's account, this event must have happened during the labour. The placenta was soon expelled, and nothing unfavourable happened. The pelvis was examined and found full sized. The patient recovered as well as after ordinary labour.

Case 2d.—I was desired by Mrs. Buckley, midwife, to come to her assistance in a case of arm presentation. The patient resided in Blakely street. This was her sixth pregnancy. She had been in labour about eighteen hours, and the membranes had ruptured about eight hours before, but the presentation was not then ascertained. The pains continued strong, and after some time the hand was found down first. When I came I discovered the left arm completely beyond the external parts, the shoulder stern wedged in the pelvis, and the left clavicle pressed on against the right ramus of the pubis. The uterus felt very hard, and firmly embraced the child; its transverse diameter was longer than when the head presents. Having determined, is possible, to turn the child, I first gave the woman a drachm of laudanum, and abstracted from the arm, by a large orifice, from sixteen to twenty ounces of blood. I now attempted to pass the hand to turn, but was foiled. I waited a short time in hopes that the pains would diminish in force, but again did not succeed. I abstracted more blood, but notwithstanding she felt faintish, the uterus continued to act strongly. Hoping that this organ would be tired by its exertion, I thought it better to trust awhile to this chance than to embryotomize, but in this expectation I was disappointed. After a time I found that the ribs of the child were pressing more on the perinæum, and so continued, until from the influence of a very strong pain, the breech was pushed along it, and was soon first expelled, succeeded by the rest of the child, its head and right arm coming the last. During the entire change the left arm remained entirely external, and the clavicle *firmly fixed* against the pubis. It was of average size, and recently dead. The placenta was soon expelled. There was no reason to believe that the maternal pelvis was above standard measurement. There was no hemorrhage or structural laceration. She recovered well.

British Record, July 1, 1848, *p.* 246.

156.—CASE ILLUSTRATIVE OF SO-NAMED "SPONTANEOUS EVOLUTION."—

By Henry Winterbottom, Esq., Surgeon to the Manchester and Salford Lying-in Hospital.

[Mr. Winterbottom was sent for to a woman thirty-one years of age, who had been in labour with her sixth child about two hours. He says:]

By a vaginal examination, I discovered the hand protruding externally, and on passing the finger along the vagina, I felt what I considered to be the shoulder. Having determined to turn, I immediately prepared for the operation, previously giving a full dose of laudanum. On passing my hand to change the position of the child, I immediately recognized that part which

I had at first taken for the shoulder, to be the breech obliquely placed, and which had partially entered the pelvis. I now desisted from any further attempts to turn, and no sooner had I come to this determination than a strong pain occurred, which forced down the breech, during which event, the arm and hand retired. The pains continued powerful, and in the course of a few minutes, a full-sized dead child was expelled. The placenta soon followed. There was nothing further unfavourable happened, and she is at present doing well.

Remarks.—The rapid descent of the breech in this case might have led some to consider it as the result of the process misnamed "Spontaneous Evolution;" but from what I had previously learned from having read Douglas's description of this wonderful natural operation, and also from the remarks and demonstration of Dr. Radford, I was convinced it was not so, and that it was only a compound presentation.

It also explains to us why we read so frequently of cases of "Spontaneous Evolution," and it further affords to us an important beacon not to be rash, or have recourse to operative means, which under the most favourable circumstances, cannot be said to be entirely free from danger. At a future time, I shall report a case of expulsion of a child in a double position.

[Having now placed the matter (*it is hoped*) in a clear light, a few concluding observations are called for. First, we may assert without fear of contradiction by any one that reflects on the subject, that no such a circumstance as evolution ever takes place, either in the pelvis, or uterus, except where the accoucheur turns the child by his own hand; in such a case, the body of the fœtus really performs an evolution; with this exception, evolution *never occurs*. For, in the cases called by authors spontaneous evolution, the child never revolves at all. In the one instance, the arm is so low down that it never retracts; the remaining part of the fœtus unfolding itself past the fixed presenting part. In the other cases it is a mere choice of parts, favoured by peculiar circumstances, the child still performing no *evolution*. The strict meaning of such a term being a turning round of the fœtus. Thus, then, the term evolution is incorrect, and does not in the least explain the intention of nature. Velpeau calls it unfolding of the body past the presenting part; still this is not a satisfactory term. I should be inclined to consider the first class of cases under the term of Doubling Presentations, which would, at least, express the object nature has in view. The other class of cases may be best known as *Changes of position in utero*. At all events, the first cases are always associated with the true pelvic cavity, while the others are strictly uterine, and not pelvic operations.—*Ed. British Record.* *British Record, July* 1, 1848, *p.* 245.

156.—AN UNUSUAL CASE OF UTERO-GESTATION.—By W. NEWNHAM, Esq., Farnham.

[On the 16th of November, 1822, a woman in the parish of Farnham, Surrey, after having had irregular uterine action for two days, was delivered by a midwife of a dead fœtus, of a little more than thirteen inches long, and having the appearance of a seven months' fœtus. The placenta was shortly afterwards expelled, and it was then found that there was a second fœtus, living and active, in utero: but as there were no pains and no hemorrhage, it was determined to wait the event. The woman recovered favourably; and on the 14th of January, 1823, or fifty-nine days from her premature accouchement, she was again taken in labour, and delivered of a fine healthy child. She had been regularly unwell on the last week of March, and expected her confinement to take place about Christmas. On this case Mr. Newnham makes the following observations:]

I. This case does not appear to have been one of *super-fœtation*, but rather one in which two ova had been impregnated at (or very nearly at) the same time; inasmuch as the appearance of the still-born fœtus, the previous history of the patient, and the subsequent fulfilment of the regular term of utero-gestation with regard to the remaining fœtus, all *concur* in fixing the period of impregnation at about a fortnight after the last appearance of the catamenia.

II. Many circumstances in the history of uterine economy have repeatedly shewn its power of selection, of carrying on its function of gestation as long as it could be done with advantage to the parent and her offspring, and of taking on its expulsive action when this compact has been destroyed, and its contents became irritants to itself, or to the general system of the mother. This law has been frequently shown in the case of blighted ova: the death of the fœtus from whatever cause, and at whatever period of its development; the existence of moles, polypi, hydatids, &c. But our views of its variety of function are enlarged, and our admiration of the wonderful resources of nature is augmented, when we perceive the uterus carrying on the process of gestation with twin fœtuses—becoming irritated by the death of one of those fœtuses—taking on its expulsive action for the purpose of ridding itself of the irritating cause—and immediately afterwards sinking again into a state of quiescence, and reassuming its gestatory function in order to carry on the remaining living fœtus to its full term, and thus securing its perfect development—exempting it from the dangers commonly attendant upon premature birth, and procuring to the mother the advantages accruing to the parental system from the *natural completion* of the parturient function.

III. The practical inference to be drawn from the preceding narrative is, that in those cases of premature labour, where one fœtus shall have been expelled, but a second or more shall be remaining in utero; where the membranes of the remaining fœtus shall have been undisturbed, and its vitality shall have been established; where the expulsive action of the uterus shall have subsided; and where there exists no contra-indicating symptom, producing fear for the safety of the parent; it is the duty of the practitioner not to interfere, but quietly to watch his patient, and see if nature will not herself remedy the disorder of her functions which has been apparently produced. It is infinitely better thus humbly to expound nature's intentions, than to enjoy the éclat of a mighty simple operation, viz., rupturing the membranes, turning, and delivering by the feet, and thus exposing parent and child to considerable unnecessary risk.

IV. These inferences do not happily rest on an individual case: many similar instances have been noticed, but at the same time they are not of such every-day occurrence as to supersede the propriety of recording them, and thus enlarging our acquaintance with the almost endless wonders of the uterine system.

[In the London and Edinburgh Monthly Journal of Medical Science, Dec., 1842, a case is related by Dr. Jameson of a blighted twin being retained, with its placenta and membranes, for seven weeks after the birth of its fellow twin alive, and which was presumed to have arrived at the full period of utero-gestation. This is very remarkable! We can easily conceive the uterus to be endowed with the power of ridding itself of a blighted or dead fœtus before the period of utero-gestation is accomplished, even allowing the second fœtus to be retained to the full period; but to throw off the healthy, and retain the blighted one, and that beyond the usual period of pregnancy, is an anomaly proving that the laws of nature, in many cases, are extremely difficult of explanation. In the *Lancet*, *Jan.*, 1843, a Mr. Vale recites the case of a woman, being pregnant with twins, giving birth to the first alive, at the seventh month; and the second also alive, two months afterwards, being the completion of the proper period of utero-gestation. Drs. M'Clintock and Hardy, in their truly excellent and practical work, entitled "Practical observations on midwifery," 1848, record the case of a female at her sixth pregnancy producing twins, both children being girls, the first of which was strong and healthy, and apparently at full time—the second much smaller, dead, copper-coloured, and in a state of putrefaction. In this case there was but one placenta, and that part of it which was enclosed by the membranes of the dead child was slightly darker and more consolidated than the rest. We (the Ed.) have in our practice experienced three cases in which the births of twin children were separated by a space of time; in two cases an interval of three weeks occurred, and in the other fourteen days. In all three cases the first-born fœtus was dead. Such examples go far to prove that in cases of plural births each fœtus possesses its independant involucra. We do not detect any of the characteristics of super-fœtation in these cases; in fact, we experience considerable doubts respecting the majority of cases published under that title.—*Ed. Brit. Record.*]

Monograph in British Record, April 15, 1848, p. 2.

157.—ON THE USE OF BITARTRATE OF POTASH IN UTERINE HEMORRHAGE.—By Dr. SILVESTER, Clapham.

[Dr. Silvester states that cream of tartar possesses singular power in controlling uterine hemorrhage. He finds it equal to any other remedy, in hemorrhage from separation of the ovum or placenta, polypus, malignant disease, &c.; but says he,]

It is in menorrhagia, or excessive menstrual discharge, prolonged continuously beyond its usual duration, or appearing at irregular intervals, that it displays its unequalled efficacy. Sometimes after abortion the patient continues to suffer from an occasional discharge which gradually ceases after inflicting much injury on the general health, and is with difficulty cured by tonics and astringents; it will in such cases be found to effect an almost instantaneous beneficial change. There are also instances met with in practice of a sanious or pale secretion from the uterus, sometimes treated as leucorrhœa by local astringents; they are accompanied by venous bruit, and are examples of imperfect menstruation. These yield rapidly to the bitartrate of potash, and, singular to say, the patient often recovers perfectly, without the administration of iron or other tonics.

Provincial Medical and Surgical Journal, Sep. 6, 1848, p. 486.

158.—CASE OF PUERPERAL CONVULSIONS IN WHICH GALVANISM WAS USED.—By Dr. J. R. WARDELL.

[A healthy-looking woman, twenty-four years old, was attacked at the conclusion of the first stage of labour by a paroxysm of general muscular rigidity, accompanied by congested countenance and slow pulse, insensibility and incoherence. Delivery was accomplished as soon as possible, but the paroxysms shortly afterwards returned, and an attempt to bleed the patient was unsuccessful. The skin becoming colder, the pulse slower—44, and the countenance more congested, stimulants were given by the rectum, and rubbed on the chest, but without good effect. Dr. Wardell proceeds to say,]

Symptoms of amendment not becoming manifest, it was very properly suggested by Mr. Cole that voltaic electricity should be tried, with a view, if possible, to rouse the central organs of the nervous system. Mr. Cole, who has long used galvanism as a medicinal agent, and often with marked success, had by him three or four descriptions of apparatus; that of Bichoffners was selected, and readily rendered available. I carefully noticed the pulse, which was now 58, and Mr. Cole then placed one wire behind the neck, the other over the last lumbar vertebra. In ten minutes the pulse rose to 100, and remained at that degree of frequency so long as the electric fluid was employed. She soon expressed herself as being "better," and seemed more collected. In a quarter of an hour after the wires were discontinued, the pulse fell to 80, but was of improved strength and volume; the skin generally grew warmer, the looks were more natural, and she now answered questions rationally.

Eight o'clock. (*Vespere.*) No return of fits; surface warm and moist; pulse 64, of good volume and strength. Ordered a little gruel, and hot bottles to the feet.

19th, half past one, p.m. Summoned in great haste, it being reported she had had in quick succession three fits, which were pretty similar to those yesterday. No foaming at the mouth. On my arrival was sensible; countenance red and flushed; skin hot; pulse of better volume and strength; tongue rather dry; eyes a good deal injected; head hot; some lachrymation; pupils normal.

Venesectio ad oz. xi. (which was carried so far as to produce a slight impression upon the pulse.)

℞. Calomelanos, gr. iv.; pulv. opii, gr. iss.; extr. hyosciami, gr. iv. Misce. fiat pil. ij. statim sumendæ. Empl. lyttæ, nuchæ. A bladder of ice to be applied to the head.

Eight o'clock, (*vespere.*) No return of fits. Since she took the pills she has had a tranquil and continuous sleep; says her head feels "comfortable" since the application of the ice; pulse 76, full and soft; skin moist; tongue not at all dry, and tolerably clean. Countenance natural, and expresses herself as much better. [She was convalescent in a few days.]

Prov. Med. and Sur. Jour., May 17, 1848, *p.* 262.

159.—NEW INSTRUMENT FOR APPLYING GALVANISM TO THE UTERUS.

Dr. Tracy E. Waller recommends the following instrument in applying the galvanic current:—It is made of seasoned wood, of proper size and length, and bent to suit the vaginal curve in the direction of the womb; through this a copper wire passes, with a metallic ball one inch in its longest and three-fourths of an inch in its shortest diameter, fastened by a screw to the end, and coated with silver. The wire from the machine is attached at the handle end of the instrument by means of a small hole through the conducting wire or rod. The handle is turned, and of convenient size. The wood from the ball to the handle is well coated with sealing-wax varnish, and it is thus rendered a very neat and durable instrument. When applied to the womb, contraction immediately follows. The manner of making the application is as follows:—A piece of flannel, wet in alcohol or spirits, should be laid over the abdomen of the patient; on this the positive pole is to be held by an assistant, while the physician applies the instrument attached to the negative pole introduced into the vagina, and resting on the os uteri. Galvanism may be employed, no doubt, with success and perfect safety, in all passive forms of uterine hemorrhage; and in that common and most distressing complaint, prolapsus uteri, it will be a highly useful remedy. It should be remembered that the negative pole of the battery is attached to the uterine conductor, and the positive applied to the abdomen just above the pubis. Galvanism is useful in dysmenorrhœa. *Medical Times, Aug.* 12, 1848, *p.* 240.

160.—ON THE FREQUENCY OF FLEXIONS AND VERSIONS OF THE UTERUS.—By Dr. Ashwell.

[Dr. Ashwell, it will be seen, does not agree in the opinions which have recently been so widely promulgated, respecting the frequency of displacements of the uterus. He says:]

I have carefully read all which has been recently published on retroflexion of the uterus, but I am still unconvinced as to the supposed frequency of this and the related forms of displacement. I do not agree in Dr. Simpson's opinion, "that these displacements of the unimpregnated uterus, known by the names of retroversion and retroflexion, anteversion and anteflexion are very common, and which, from the want of any proper means of diagnosis (the uterine sound), had been almost constantly mistaken for fibrous, carcinomatous, and other tumours situated between the uterus and rectum, or between the uterus and bladder."

It is scarcely possible to suppose that any one, with the slightest share of obstetric knowledge and tact, *could* mistake these maladies for fibrous or cancerous tumours, especially when placed between the womb and rectum, or the womb and bladder. In my experience, these diseases are far too serious to allow much hesitation either as to their locality or their symptoms. It is happily otherwise with the supposed very numerous cases of anteversion and retroflexion of the uterus,—cases in which the uterine bougie, (according to Dr. Simpson,) "by showing the direction of the uterine cavity, and hence of the uterus itself, and by its enabling us, when it is introduced, to change at will the position of the organ, affords a simple means of detecting these displacements."

Of such instances, it is fortunate that the results are not always serious; for Dr. Rigby remarks, "the above case," (*one of retroflexion*) "presents several features of interest. In the first place, a considerable degree of retroflexion is ascertained to exist without its producing any derangement or inconvenience whatever; the only change which could have been attributed to it, was the circumstance of the catamenia having been rather more profuse since her marriage. No trace of dysmenorrhœa or ovarian irritation had existed, not even the slightest degree of pain or uneasiness about the pelvis, nor was she at all aware of any difference in her feelings, either after I had replaced it, or when it returned to its former retroflected condition."

May not this be equally true of most of these cases? I cannot avoid thinking that this uterine sound not only detects, but makes many of these supposed displacements. All practical men know that the uterus varies naturally in its position, in its degrees of mobility and immobility, and in the influence exerted upon it, as to position, by a loaded or empty rectum or bladder; and it must be kept in view, that the curve of this steel bougie may not be the curve of the uterus; and if, therefore, it is to be introduced at all, (and I wish it were far less frequently so,) the normal position of the organ, thus spiked, must be made to follow the curve of the iron instrument, entering, and thus unnecessarily intruding upon its cavity.

If we contrast the symptoms of these supposed cases with the symptoms of real retroversion, retroflexion and anteversion, the difference is very striking and cannot fail to induce the conclusion that the uterine sound, an unusual degree of mobility of the uterus, and a too slight acquaintance with the normal varieties of the curve of the womb, have led to great error as to the frequency of these truly rare maladies.

I am the more induced to make these observations, by finding that the uterine sound and its twin instrument, invented by Dr. Simpson for permanently fixing a piece of ivory inside the uterus, are not harmless, but, when used, really do mischief. Dr. Hensley says, in reference to this uterine support, "that it should be adapted while the patient is in bed, and she should be kept quiet for some days, till the uterus becomes accustomed to its presence. I have known peritonitis induced by the neglect of this precaution." (This is rather a severe penalty to pay for the cure of such affections as those described by Dr. Rigby.)

Two cases have recently come under my care, and I have heard of more, where the results arising from the use of this instrument have been very serious. Looking at it pathologically, I can scarcely imagine anything better devised for inducing disease. According to this practice, a piece of ivory, two inches and a half long, is to be introduced into the uterine cavity and its bearing must of necessity be on some part of the lining membrane, a surface ill adapted to support the pressure for two or three months together of such an instrument. The consequences may be supposed. One of the patients from whom, after a long and distressing journey, I removed this ivory one-pronged fork, told me she had never been free from pain since its introduction. In addition it had produced frequent and intense sexual excitement, preventing sleep for many nights together, and had kept up constant leucorrhœal discharge. In the other example, during the two months this instrument had been worn, the sufferer, in addition to the previous complaints, had never been free from sanguineous discharge, lumbar pain, and frequent desire to micturate. In both the speculum showed that abrasion of the os and the ostium vaginæ had resulted from the use of the so-called uterine supporter. *Lancet, Sept., 9, 1848, p. 291.*

161.—ON A NEW PLAN OF TREATING OVARIAN DROPSY.—By Dr. E. J. Tilt, Physician of the General Farringdon Dispensary.

[In imitation of the method by which nature has wrought a cure in the cases of spontaneous rupture of the cyst, per abdomen, Dr. Tilt proposes]

1. To establish solid adhesions between the peritoneum covering the cyst and that lining the abdomen.

2. To effect the smallest possible ulcerative opening of the cyst through the centre of these adhesions.

3. To keep the cyst always full, and only relieve it of the overplus of fluid by which it is distended.

1. The necessity of establishing solid adhesions between the peritoneal covering of the cyst, and the peritoneal lining of the abdomen is obvious, for by these means the contents of the cyst can be removed without their falling into the peritoneum. To effect these adhesions various plans have been proposed. Vienna paste has been frequently made use of with success in cases of hydatid cysts. I might relate a case which occurred in the practice of Professor Recamier, wherein its repeated application did not produce the desired adhesions, but it may generally be depended upon. An additional reason for adopting the use of Vienna paste is, that by weakening of the abdominal parietes in one particular point, it allows the internal pressure of the contents of the cyst to find a vent by its ulcerative opening. Others have tried to promote adhesions by passing needles into the cyst per abdomen; but, independent of the dangers of this treatment, it is afterwards necessary to open the cyst with the bistoury, and such an opening would, as I before said, be followed by the ingress of air, inflammation of the cyst, &c., &c. The same observations apply to a plan of curing hydatid cysts of the liver, successfully performed by Dr. Begin, which has also been proposed for the cure of ovarian dropsy.

2. The second object I have in view, is to effect the smallest possible opening in the centre of the adhesions. Here it is obvious that the bistoury and the trocar must be rejected, and that the opening must be the result of the process of ulceration. The opening should not only be small, but valvular, self closing, resembling, to a certain extent, the outlets of the excretory canals of the human frame. I recommend Vienna paste, because the opening that has followed its application has presented all these characters, and I anticipate a similar result in other cases, provided the quantity of the caustic is not too considerable, or the application of it too often renewed. There is every reason for believing that, in such cases, the internal distention of the cyst will be sufficient to produce its opening, when the progress of ulceration has destroyed the natural cohesion of its tissues in some particular point.

3. The third object is to keep the cyst always full, and only to relieve it

of the surplus of its contents. This, I may say, is founded on a principle of surgery which forbids the emptying of the contents of shut cavities, if the ingress of air is imminent. It not only holds good in hydatid cysts of the liver, but also in hydrothorax. It is evident that any instrumental opening will afford greater facility for the emptying of the cyst, and also greater facility for the ingress of air into its half-emptied cavity; whereas, by the valvular opening which is the result of ulceration, the sudden emptying of the cyst will not be possible; it will only be relieved *per stillicidium* of the overplus of liquid which distends its cavity.

Though the cyst remains full, as its walls are no longer distended by any internal pressure, they naturally contract, and the cyst diminishes. It is necessary to state, that the fulness effectually hinders the ingress of air into its cavity, an accident so much to be dreaded when the internal surface of the cyst is newly laid open; though, as far as my experience goes, it is not attended by any alarming symptoms at a later period, when the lining membrane of the cyst has been modified by the secretion of muco-pus. Having stated what are the objects to be effected, and the means by which they *may* be effected, I will proceed to give some further practical hints with respect to the treatment of ovarian cysts by an ulcerative opening.

I consider this plan of treatment useful only when the cysts are *monolocular;* and as the best modes of investigation are not sufficient to establish an accurate diagnosis of the peculiarities of ovarian cysts, I preface any attempt to a radical cure of ovarian dropsy by ordinary tapping. By this preliminary step we ascertain the nature of the fluid, the amount of solid deposit in any portion of the parietes of the tumour, and we are also able to test the degree of tendency to inflammation of the peritoneum in the case under treatment. If tapping gives rise to inflammatory accidents, I consider the case unfavourable, and proceed no further. If tapping is well borne, if there be no great amount of solid deposit, and the cyst be monolocular, I wait till it has refilled to half the size it had attained when the patient was previously tapped.

The choice of the spot most favourable for opening the cyst will vary according to the peculiarities of the case. If in any portion of the abdomen fluctuation is more superficial, and the abdominal parietes are thinner than elsewhere, that spot should be chosen for the opening. If this is not the case, the opening should be made an inch or two below the umbilicus, and on the mesial line. A certain portion of the Vienna paste is applied to the place of the abdomen chosen, so as to produce an eschar about the size of a half-crown. The eschar should be left to fall of its own accord: when that has taken place, another portion of the caustic must be applied to the abraded surface, if the thickness of the abdominal parietes should require it. This will not be often the case, and our application of the caustic will generally be found sufficient, the abdominal walls having become much thinner from over distention. Some days or weeks after the falling off of the eschar, an ulcerative opening will take place, "*sua sponte*," and not by any surgical interference.

When once the opening is made, the contents of the cyst oose out; at first, in very considerable quantities: but the discharge gradually diminishes. Abdominal pressure becomes an indispensable adjunct of the treatment; it should be made use of with the view of giving support to the weakened pariotes of the abdomen, without any intention to empty the cyst; it should therefore be moderate at first, and be gradually increased, until the cyst, having been emptied of the fluid it originally contained, and being too large a receptacle for the amount of liquid secreted by the lining of its internal cavity, requires to be diminished by all possible means. Then abdominal pressure should be made as strong and effectual as possible, and of course continued day and night.

We find injections are additional means of effecting our third intention. They serve a double purpose, not only enabling us to keep the cyst full, but also furnishing us with the means of removing from it the fœtid secretion which after a time will be generated in its cavity. When should injections be made? When the fœtidity of the secretion is great, and on that account will most probably cause the inflammation of the cyst, and perhaps the infection of the system by resorption of foul matter. What should be injected? A solution of honey, in water or barley-water, has been injected in hydatid cysts, and with advantage. I have myself injected a solution of honey in ovarian cysts, but have not been sufficiently pleased with the result to do so again, and can therefore recommend nothing but tepid water.

Mode of Making Injections.—In this instance we may safely say, that success depends on attention to trivial circumstances. I must therefore enter into details. The point of an india-rubber tube, eight inches in length, and funnel-like in shape at its other extremity, must be gently passed through the opening into the cyst. The end of an ordinary syringe, filled with tepid water, is then fixed to the free end of the india-rubber tube, (care being taken that the syringe contain no air,) and the water is gradually injected, stopping now and then to allow it to find its way into the recesses of the cyst. In the first part of the treatment a large quantity of water might be injected, but a pint will be quite sufficient at a later period: the sensations of the patient will guide the surgeon as to the quantity. When she complains of a feeling of distention, the injection should be stopped; the syringe should then be separated from the india-rubber tube, and the water left a few minutes in the cyst. Gentle pressure should be made with the hand, laid flat on the abdomen; or, what is better, by the contraction of the abdominal muscles. On the patient being told to strain, the overplus of the contents of the cyst trickles out of the tube, and may be received in some vessel. No violent pressure should be made in order to empty the cyst, such pressure giving rise to considerable permanent soreness of the abdomen: and the emptying of the cyst be followed by the ingress of air into its cavity. The amount of water injected will vary from a pint to an ounce, and in the latter part of the treatment may be made by patient herself. When it has been once thought advisable to make injections, they should be continued regularly every day, at the same hour, before breakfast; and if the fœtidity of the secretion should require it, also before dinner. *Lancet, Aug.* 26, 1848, *p.* 232.

[Dr. Tilt, in concluding his series of papers, make the following practical deductions:]

1. That small and moderate-sized tumours may be cured by preparations of iodine given in large doses internally, as well as externally, the contents of the cysts being re-absorbed by the walls of the cyst, as in cases seen by Dr. Rayer and Madame Boivin, or else voided per rectum, or per vaginam, as in many recorded cases.

2. That tapping per abdomen, if employed as a palliative, and without any view towards the radical cure of the patient, should be deferred as long as possible, modern statistics having confirmed Morgagni's opinion of the danger of this operation.

3. That when the cyst is voluminous, and felt bulging in the vagina, there is a sufficient number of successful cases to countenance the puncture of the cyst per vaginam, an India-rubber sound being left in the cavity of the cyst, and moderate pressure being made to the abdomen.

4. That the rupture of the monolocular ovarian cysts, with the effusion of their contents into the peritoneal cavity, instead of being attended (as is even now generally supposed) by the most alarming symptoms of peritonitis, is, generally speaking, unaccompanied by any alarming symptoms whatever, thus warranting the subcutanean incision of the cyst—an operation which has been successfully performed.

5. That the ulcerative opening of the cyst, after the adhesion of its walls to the abdominal parieties, (the new plan of treatment I propose in certain cases of ovarian dropsy,) is supported alike by the complete success by

which it has been followed, in the case I have recorded, and by the success attending a somewhat similar plan of treatment in hydatid cysts of the liver.

6. That ovariotomy should be reserved for cases of multilocular ovarian cysts, and those monolocular cysts where there is a considerable amount of solid deposit, unless, from their diminutive size, or the absence of symptoms, they do not menace the patient's life by their rapid increase.

Lancet, Nov. 11, 1848, p. [illegible]

[Dr. C. Clay, of Manchester, states that he adopted the ulcerative process as a means of cure in ovarian disease, some years ago. But, says he:]

There is a wide distinction between Dr. Tilt's method and our own, which it is only justice to state. Dr. Tilt establishes the ulceration by first attacking the abdominal parietes with the slow caustic called the Vienna paste, *and then* having exposed the ovarian mass, attacking *it* by the same means. We certainly lay no claim to this mode of producing the ulceration, and shall give Dr. Tilt quiet and undisputed possession of his discovery. It must also be remembered that Dr. Tilt proposes this means to supersede the necessity of extirpation, which he condemns as cruel in the extreme. On the other hand, we established ulceration in the cases previously given, because, having made an incision, with the view of extirpating, and finding the adhesions of so general a character, and so firmy formed, we judged it prudent not to proceed with the extirpation; but, to give the female some chance, we passed a large worsted tent into the *very interior* of the tumour, and succeeded in setting up an ulcerative discharge from the inner portions of the mass through the parieties,—the worsted threads forming the medium which conducted the pus formed outwardly, and thus prevented its accumulation in the abdominal cavity, the mischief of which is well known in the history of ovarian diseases.

We had the happiness to succeed in the two cases before alluded to, by the means we had adopted; and since our communications with Dr. Tilt have been made, another successful case has occurred to us. With regard to the cruelty of the two modes of procedure, as compared to each other, we cannot but think, on reflection, every operating surgeon will at once declare the plan we propose infinitely less painful, and occupying much less time than the plan by the Vienna paste, a remedy which we happen fortunately to know some little about. Some years ago we introduced into England the mode of operation, as proposed by M. Laugier, of Paris, to destroy varicose veins by the slow caustic, or Vienna paste. This operation we have performed now fifty times, and always with success—the cases turning out perfect and permanent cures. Many of them are reported in the Lancet of 1839-40-41-42. Notwithstanding all this, we were witness in every case of the most excruciating torture continued for many hours together, and this only to effect the destruction of the coats of a vein on the surface of the integuments. In respect to the plan of treating ovarian disease by this slow caustic, first, there is the opening to be made in the abdominal parietes, which must, as a matter of course, being of considerable thickness, occupy a very long time—some hours at least—more likely many hours; and for the pain to be borne the while, we leave our readers to guess, hoping they nor their patients may ever have to experience such. Now, all this first part of the question by our plan is settled by the scalpel in a few seconds; and we argue, even if the operator had no intention to extirpate, however favourable the case might be, but was bent upon the ulcerative mode for the tumour, surely he would never occupy hours in going through the abdominal integuments, and with great suffering to the patient, if he reasonably could effect the same in a few seconds, and that without, or at least nearly without, pain. But to proceed. The opening being made, and the tumour exposed, Dr. Tilt then attacks the walls of the tumour (the least sensitive part) with the slow caustic. How long the process will be required to reduce a tumour of from 60 to 70 pounds weight, (which we have more than once seen,) or how often this excruciating caustic may have to be repeated, we are not very much enlightened about. Then, again, the difficulty of keeping the ulcerated part of the tumour opposite the ulcerated opening in the integuments; the liability of the pus formed lodging in the peritoneal cavity, the probability of Vienna paste becoming half or wholly dissolved, and spreading to other viscera; the mischiefs, many and serious, that may arise from such circumstances. On the contrary, we propose, in the second stage of the operation, if the tumour is not adhered, to remove it; and if adhered, not to a formidable extent, still to remove it. But if so formidably adhered as to present insurmountable difficulties in the way of removal, in such a case we should consider it our duty to lessen the volume of the tumour with the scalpel as much as possible (and we never saw a case where the tumour could not be lessened very materially, even from its interior), and then set up the ulcerative process by worsted bands from the interior of the tumour, where the seat of the disease is most active, and where its vitality and power of growth are soonest destroyed. The first opening, too, being always down pretty close to the pubis, and the worsted bands being brought out at the lowest point of the wound, there can be no accumulation whatever in the abdominal cavity; no mischief arising from the presence of pus in that cavity (often the cause of death). We leave the question of choice to the profession, confident that the surgeon's knife is infinitely less cruel than any slow burning caustic, and immeasurably less dangerous to the patient.

British Record, Nov. 1, 1848, *p.* 366.

162.—ON THE USE OF BICHLORIDE OF MERCURY IN HYPERTROPHY AND INDURATION OF THE UTERUS.—By Dr. Oldham.

[In this paper, Dr. Oldham treats of the employment of bichloride of mercury in ulceration of the cervix uteri, and in engorgement of the womb, with enlargement, hardening, and often displacement backward. Respecting the latter disease, he observes:]

Chronic induration of the uterus, or hard engorgement, may be either (1) primarily an affection of the body of the womb; or (2) it may be induced from ovarian irritation; or (3) it may be caused by disorders of the digestive organs, in which case it is generally associated with a more or less copious elimination of lithic acid, and often with hemorrhoidal swellings.

1. The first class of cases are those which are most commonly met with in practice, and are immediately referable to labour or abortion. Numerous examples of this kind come under observation, where the venous circulation of the uterus never recovers itself completely, and the body of the womb remains large and congested. That which Lisfranc termed morbid hypertrophy persists; and in time the state of engorgement is replaced by induration and increased bulk of the uterine walls. It rarely happens that the structures which support the womb are able to sustain this increase of weight, and displacement of the uterus downwards and backwards is the general result. It is usually a slow process before the womb becomes indolently hard; but every stage of its progress may be traced by examination of the living subject. At first the organ is large, and more or less displaced; but by passing the finger to the upper and back part of the vagina, without touching the cervix, the patient lying either on her side or back, the swollen body of the womb may be reached, and examined by itself.

In this early stage, the uterus is painful when touched, and the structure gives a little when pressed by the fingers, and an attempt to replace it is attended with some immediate suffering. It is a very sure sign of a congested uterus when, in addition to any pain which its displacement occasions, it acquires a dull, or, in some cases, a lively sensibility when touched. When, however, the muscular tissue of the uterus has become indurated, and permanently bulky, it often loses this sensibility, and the finger, when pressed against it, detects only a hard, resisting, globular body, generally occupying the upper and back part of the pelvis. The size of the uterus and the character of the induration varies greatly. I have sometimes felt the posterior wall of the womb, thus rendered accessible to the touch by its retroversion, to be the volume of a moderate-sized orange, or even greater, without its enclosing any morbid growth, and the hardness to be in degree equal to that of true carcinoma; while in other cases the increase of bulk and induration are less in amount. These indurations and enlargements of the uterus do not occur, so far as my observation of their morbid anatomy goes, in patches so as to form knots or projections from the surface of the uterus, but it is evenly distributed over the entire organ; the only practical fact being, that a womb so affected sways backwards, and the natural convexity of the posterior wall becomes more distinct and very obvious by a vaginal or rectal examination. I have known this morbid condition of the womb to follow puerperal metritis, and also that far more rare disease when hysteritis has been excited by a sudden suppression of the menstrual flux, or the use of an irritating injection into the uterine cavity for some disorder of its lining membrane.

2. The second great cause of congestion and hardening of the uterus is to be ascribed to irritation and congestion of the ovary, in which the Graaffian follicles, with their contents, are necessarily implicated. The influence which the ovary has upon the womb when in a state of functional activity, as during the menstrual periods, or still more distinctly when disengaging the ovum which has been impregnated, is well known. It may be said, in a few words, to consist of great vascular turgescence, so that the walls of the uterus swell out considerably and soften, and its glandular system is evolved. It was after carefully examining specimens of the dismenorrhœal membrane, and comparing them with some flaps of uterine decidua cast off in abortions, that I first discovered the identity of the two; and the pathology of the membranous form of dysmenorrhœa, with its attendant congestion and uterine enlargement, was satisfactorily explained. I have known several instances of chronic hypertrophy and retroversion of the uterus, arise in the course of a long-continued membranous dysmenorrhœa; and with the physiology of the ovary to guide us, there is no difficulty in tracing the sequence and reciprocal dependence of the morbid actions. It is the ovaries, and not the lining membrane of the uterus, which is primarily in fault. These important organs, if morbidly irritated, whether from functional disorder at the menstrual periods, in the vital acts of oviposition,* or from sexual excitement sympathetically congest the womb; and by the development of the uterine glands, the thin, transparent mucous membrane of the womb becomes raised into a rich, soft, cibriform membrane, which is cast off at the menstrual period. A continuance of the ovarian irritation involves a repetition of this process; while at every catamenial period, a portion, or the entire of the altered mucous membrane is separated and cast off, the body of the uterus becomes permanently larger, heavy, and displaced. The uterus of a prostitute, as may every now and then be seen in the demonstrating rooms of our large public hospitals, is from two to four times the size of a healthy unimpregnated womb; its muscular tissue is as hard as a fibrous tumor; the mucous membrane of the

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* In saying this, I must guard myself against assenting in full to the doctrines of Bischoff, Raciborski, Pouchet, &c., as to the spontaneous dehiscence of the vesicles at the menstrual period in the human subject. The theory is very alluring; but the appearance of early corpora lutea in the human female, when I have known conception to have very recently taken place, quite confound in my mind the inferences of those authors. I am quite sure that no such bodies appear in the ovaries after a menstrual period.

body of the womb is opaque and flocculent; the glands of the cervix are large, and filled out with tenacious mucus; the coats of the arteries are more dense and visible than usual; the capsules of the ovaries are thick, corrugated, and lacerated at different points; the Graaffian follicles are, some of them, three or six times their proper size, and filled with clear fluid or blood; while others are collapsed and empty, with thick opaque puckered tunics; and the intervening stroma is broken up by clots of extravasated blood in different states of absorption. Over the whole of the internal organs—uterus, tubes, and ovaries—a complete web of false membranes is very commonly formed, which fixes the uterus immoveably in its semi-prolapsed or retroverted situation. Such an uterus affords a good example of the long continuance of ovarian excitement in transforming the contiguous sexual organs. Dr. Rigby entertains the opinion that retroflexion of the womb congests and chronically inflames the ovaries, and especially the left ovary, by mechanically pressing and irritating it; and the deranged and membranous discharge is the consequence of it. I am bound to say that I have never seen a single case where an ovary has been so imprisoned by a womb turned back as to justify this interpretation; and I cannot but think that Dr. Rigby's inference has been made rather to square with his views of mechanical relief in these cases, which it helps to support, than as reasonable pathological deduction. At the last menstrual crisis, when the ovaries show manifest signs of sudden and intense activity, engorgements and indurations of the uterus, with irregular and copious losses of blood, are common morbid conditions; and the various distressing symptoms which result from the mal-position of a bulky uterus, date from this time.

3. The last series of cases of venous repletion of the uterus, with subsequent enlargement, which, I shall notice, are those in which the internal sexual organs appear to be secondarily affected, the primary disorder being connected with the organs of digestion and assimilation.

This is commonly induced by indulging in a too liberal, rich, and stimulating diet; with habits of inactivity and indolence, and a neglect of the habitual relief of the bowels; or it may be associated with an hereditary tendency to gout. Some protracted cases of congested uterus which I have treated have been manifestly caused by this condition; and I have frequently noticed its concurrence with copious deposits of uric acid, and the relief which the womb has sustained, when the kidneys have secreted a quantity of this material. One of the most troublesome accompaniments of this state is hemorrhoids; and I am desirous of noticing this symptom as the natural result of portal congestion, because it is too often, I believe, ascribed to the mechanical pressure of the congested uterus on the rectum. It may not be out of place here to remark, that of late years I have oftentimes found much immediate relief in congestions of the uterus by the employment of diuretic medicines. The use of gin and sweet spirit of nitre in mitigating the pain of dysmenorrhœa are popular remedies of this kind.

[Respecting the diagnosis of this affection, Dr. Oldham makes the following remarks: first observing by way of caution, that used in an unrestricted manner, Dr. Simpson's uterine sound is a dangerous instrument. Dr. Oldham says:]

To distinguish between fibrous tumours of the uterus, and chronic hypertrophy and induration, is, generally speaking, easy. The uneven circumscribed character of the growths, springing from the different parts of the womb, their hardness and insensibility, sufficiently characterize them. But if a fibrous tumour is developed in the centre of the posterior wall, and thus becomes covered with a shell of uterine structure, enlarged and changed as in pregnancy, the diagnosis is very difficult; sometimes even impossible. The tumour so placed belongs to the womb; and it may grow so evenly with it, and as a tumour, in every respect so closely resemble it, that no positive diagnosis can be made. Upon the whole this is a rare case; and it is of little practical consequence, as the treatment which may remove the one is the best that can be be adopted to restrain the growth of the other.

Diagnosis from ovarian growths and tumours of the broad ligaments.—An ovarian cyst, in its earliest stage, is a round, hard swelling placed behind the womb, and pushing it boldly forward; and it is only at a later stage, when the fluid contents exceed so much the solid part of the tumour, that its cystic character is felt. It then, generally speaking, gets before and above the womb, which lies either to its side or even behind it. A hard, strumous or fibrous tumour of the broad ligament is sometimes placed in close contiguity to the posterior wall of the womb, and directs the organ forward behind the pubes; and it is in their incipient states, before they have risen into the abdomen, that they have to be distinguished from the enlargement of the uterus. In many of these cases the physical diagnosis may be made out by feeling the whole of the womb before the tumour, the cervix being close behind the pubes, as far as the finger can reach, running vertically upwards, the fundus being perceptible just above the brim; and in others the uterus is felt to be small and quite moveable over the point of the tumour. Sometimes, however, the diagnosis is very puzzling, and these are the cases in which a cautious use of the sound may clear up the difficulty.

[The indications for treatment are mainly three; to reduce the size of the uterus, to strengthen the structures which have been weakened, and to improve the general health. To fulfil the first of these indications, we must use some form of local depletion, respecting which Dr. Oldham observes:]

Leeches, to the number of four or six, applied to the upper and back part of the vagina, and repeated according to circumstances, are in my experience, the surest and most direct mode of topical bleeding. The class of cases in which this local abstraction of blood is required, is when the uterus is turgid and swollen, and painful from congestion; a state which precedes its hypertrophy and induration, or which may supervene on this latter condition, and greatly augment the volume of the womb. It is generally necessary to apply leeches once or twice a week before this acquired congestion is dispersed, and they rarely fail to afford much relief.

Counter-irritants.—Blistering the sacrum, or painting the liq. vesicatorius over one or the other of the inguinal regions, when these parts are the seat of continuous pain, is often followed by immediate relief, and promotes the reduction of the size of the uterus. It is very generally my practice, in the length of time which these cases are usually under care, to have recourse to these remedies; and sometimes, by dressing the blistered surface with some sedative application, to obtain an effective means of mitigating pain. The combination of powerful sedatives with a mild counter-irritant is very well secured by the following prescription, which I use habitually when the radiating pains are very severe;—Tinct. aconit. (Fleming) ʒiv., ext. belladon. ʒss. lin. sapon c. ℥iss. ft. linimentum. This liniment, well rubbed over the seat of pain, is generally useful.

[Dr. Oldham thinks the preparations of iodine of but little use in this affection, preferring much the mild preparations of mercury. He says:]

The oxide of mercury and Plummer's pill are among the mild preparations which I allude to; but the solution of the bichloride of mercury possesses some positive peculiar advantages, in the facility with which it may be combined with other remedies, which, in my estimation give it a decided preference. It commonly happens that the health of females labouring under chronic hypertrophy of the body or of the neck of the womb suffers materially; and a reasonable fear might be entertained that the protracted employment of mercury would tend to increase this constitutional feebleness.

But, by combining the bichloride of mercury with any of the vegetable tonics, or a chalybeate, it will be found to promote and invigorate the general health, whilst its influence in reducing the hypertrophied tissue is sustained. It is this power of combination which renders it so suitable and efficacious in diseases of the uterus; and the solution may be given in doses of one or two drachms, twice in the day, for three, six, or even twelve months, to delicate females, without injuriously affecting them. It is a perfectly manageable remedy, and very rarely salivates, unless given in large doses, or the patient be excessively susceptible to the influence of mercury. For the last two or three years I have employed this remedy extensively, both at the hospital and in private practice, and the positive amount of good which it accomplishes, with the very trifling amount of evil, has led me to attach great value to it. The reduction of a large and indurated womb is generally slow, and the time which it takes varies extremely in different cases. In some cases its effects are comparatively speedy, and six or eight weeks will suffice to absorb and soften a considerable hypertrophy. A recent case occurred at the hospital, in which the patient had a heavy uterus, retroverted, and at the angle at which the body jutted out from the cervix was so acute as to give the impression, though erroneous, of a distinct flexion, to which the attention of my clinical clerk was particularly directed. In this case the uterus was greatly reduced, and spontaneously restored to its place, after she had taken the medicine eight weeks. In others a much longer time is necessary, during which the uterus becomes more free and moveable, and as it diminishes in bulk its malposition is less and less apparent. If the bowels are torpid, a little tinct. rhei may occasionally be added.

The foregoing observations on the use of bichloride of mercury in hypertrophy of the body of the uterus, apply with equal force to the more common affection of hypertrophy and induration of its neck. The facility with which this part of the womb is seen by the speculum, and its comparative organic insensibility, has suggested the employment of a powerful class of local remedies, which, in similar diseases of other parts of the body would hardly be entertained. The ordinary treatment of a simple granulating surface, perfectly healthy in its appearance, by means of nitrate of silver, either in solution or in the solid state, is the most harmless and the most generally useful of these local remedies. But when, in addition to such a surface, the deeper-seated tissues of the cervix become hard and massive from infiltration with the products of inflammation; and for the cure of it this part is recommended to be more or less destroyed by Vienna paste, the nitrate of mercury, the actual cautery, or potassa fusa; and that these measures are so assiduously recommended, and the manner of applying them so frequently demonstrated as to become familiar to every one; it is only right for us to ascertain whether a good deal of real though concealed harm is not mixed up with this apparent good; and whether other measures of a less formidable character may not be substituted for them. When first these local escharotics obtained vogue, I ventured to express an opinion that the results of cicatrization would be found to damage the cervix, and substitute a more unyielding tissue than the hard one of chronic inflammation. I was informed, however, that, unlike every other texture of the body, a slough in the cervix uteri healed without a cicatrix-tissue, and that these powerful remedies might be used without the fear of immediate or remote danger.

The experience, however, of a few years has convinced me that the hazards of irretrievably injuring the sexual passages, with other formidable symptoms, have been underrated. I have myself found, after the use of the actual cautery and the Vienna paste, very copious hemorrhages come on, when the sloughs have separated, seriously impairing the patient's strength, and requiring the plug and astringent applications to stop them. Metritis, with pelvic inflammation and abscess, I have known to occur; and from the migratory habits of hospital and private patients, I have, on several occasions, seen females on whom these operations have been performed by others with abundant traces of injury in the upper part of the it is of little practical consequence, as the treatment which may remove the one is the best that can be adopted to restrain the growth of the other.

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[Dr. Oldham thinks the preparations of iodine of but little use in this affection, preferring much the mild preparations of mercury. He says:]

The oxide of mercury and Plummer's pill are among the mild preparations which I allude to; but the solution of the bichloride of mercury possesses some positive peculiar advantages, in the facility with which it may be combined with other remedies, which, in my estimation give it a decided preference. It commonly happens that the health of females labouring under chronic hypertrophy of the body or of the neck of the womb suffers materially; and a reasonable fear might be entertained that the protracted employment of mercury would tend to increase this constitutional feebleness.

But, by combining the bichloride of mercury with any of the vegetable tonics, or a chalybeate, it will be found to promote and invigorate the general health, whilst its influence in reducing the hypertrophied tissue is sustained. It is this power of combination which renders it so suitable and efficacious in diseases of the uterus; and the solution may be given in doses of one or two drachms, twice in the day, for three, six, or even twelve months, to delicate females, without injuriously affecting them. It is a perfectly manageable remedy, and very rarely salivates, unless given in large doses, or the patient be excessively susceptible to the influence of mercury. For the last two or three years I have employed this remedy extensively, both at the hospital and in private practice, and the positive amount of good which it accomplishes, with the very trifling amount of evil, has led me to attach great value to it. The reduction of a large and indurated womb is generally slow, and the time which it takes varies extremely in different cases. In some cases its effects are comparatively speedy, and six or eight weeks will suffice to absorb and soften a considerable hypertrophy. A recent case occurred at the hospital, in which the patient had a heavy uterus, retroverted, and at the angle at which the body jutted out from the cervix was so acute as to give the impression, though erroneous, of a distinct flexion, to which the attention of my clinical clerk was particularly directed. In this case the uterus was greatly reduced, and spontaneously restored to its place, after she had taken the medicine eight weeks. In others a much longer time is necessary, during which the uterus becomes more free and moveable, and as it diminishes in bulk its malposition is less and less apparent. If the bowels are torpid, a little tinct. rhei may occasionally be added.

The foregoing observations on the use of bichloride of mercury in hypertrophy of the body of the uterus, apply with equal force to the more common affection of hypertrophy and induration of its neck. The facility with which this part of the womb is seen by the speculum, and its comparative organic insensibility, has suggested the employment of a powerful class of local remedies, which, in similar diseases of other parts of the body would hardly be entertained. The ordinary treatment of a simple granulating surface, perfectly healthy in its appearance, by means of nitrate of silver, either in solution or in the solid state, is the most harmless and the most generally useful of these local remedies. But when, in addition to such a surface, the deeper-seated tissues of the cervix become hard and massive from infiltration with the products of inflammation; and for the cure of it this part is recommended to be more or less destroyed by Vienna paste, the nitrate of mercury, the actual cautery, or potassa fusa; and that these measures are so assiduously recommended, and the manner of applying them so frequently demonstrated as to become familiar to every one; it is only right for us to ascertain whether a good deal of real though concealed harm is not mixed up with this apparent good; and whether other measures of a less formidable character may not be substituted for them. When first these local escharotics obtained vogue, I ventured to express an opinion that the results of cicatrization would be found to damage the cervix, and substitute a more unyielding tissue than the hard one of chronic inflammation. I was informed, however, that, unlike every other texture of the body, a slough in the cervix uteri healed without a cicatrix-tissue, and that these powerful remedies might be used without the fear of immediate or remote danger.

The experience, however, of a few years has convinced me that the hazards of irretrievably injuring the sexual passages, with other formidable symptoms, have been underrated. I have myself found, after the use of the actual cautery and the Vienna paste, very copious hemorrhages come on, when the sloughs have separated, seriously impairing the patient's strength, and requiring the plug and astringent applications to stop them. Metritis, with pelvic inflammation and abscess, I have known to occur; and from the migratory habits of hospital and private patients, I have, on several occasions, seen females on whom these operations have been performed by others with abundant traces of injury in the upper part of the vagina and cervix uteri. The latter I have felt decidedly contracted—I might say strictured—by the use of potassa fusa applied eighteen months before; and adhesions, and puckerings, and radiating cicatrices in the upper part of the vagina have, to my knewledge, resulted from the fluid escharotic escaping beneath the edge of the speculum, which, in spite sometimes of the greatest care it will do. Cases of this kind are sent away as cured, and the slow and painless process of cicatrization and contraction is neither watched or noted.

I trust, in recounting these evils, I shall be acquitted of any prudish fear respecting the employment of these remedies, and, above all, of any disrespect to those who have so ably advocated them. But I cannot but think that we are pushing them too far; and the result of this conviction in my own practice has been very much to restrict their employment, and to select the cases with far greater circumspection than is either recommended by others, or formerly adopted by myself. Neither have I found such an amount of success result from them as others appear to have done; and when I have read of cases of ulceration, with chronic thickening of the cervix of long standing, cured in three or four weeks' time with very little else than the application of caustic, I have been forced to confess that similar cases, treated in the same way, have been under my hands for almost as many months. For some time past I have made it a rule to prescribe the liq. hydrarg. bichlor. in all cases of inflammatory hypertrophy of the cervix; and not only have I found it materially expedite the cure of such cases, but it has enabled me to dispense to a great extent with the local treatment, which with me is very much confined to the occasional use of leeches, and subjecting the hard tissue to the immediate influence of mercury, by the insertion of a vaginal suppository, made up of the ung. hyd. nit. Still cases do come under notice of incipient fungoid disease, or of everted labia, where the inner surface becomes nodulated and projecting like the commencement of the morbid growth, in which the potassa fusa or acid nitrate of mercury are of the greatest benefit.

[The colon and rectum should be daily cleared out by the use of tepid or cold milk-and-water injections, long continued exercise or standing avoided, and sexual intercourse abandoned, or indulged in with the greatest moderation. The second indication, that of strengthening the structures below the uterus, is to be accomplished by the use of cold hip baths. Also, Dr. Oldham says:]

Suppositories of tannin, in the proportion of ten or twelve grains of tannin made up with honey, and passed into the vagina by the patient, after the bladder has been emptied, I have for a long time been in the habit of using; and the only objection which I have found to this otherwise convenient method of applying astringents is, that the suppository is apt to stick to the vaginal coat, and several of them will collect in the canal and cause much offensive irritation. They are not easily cleared away by ordinary washing, and the vagina requires to be syringed out with warm water every now and then.

Fluid astringents, as the decoctions of oak bark, tormentilla, &c., or solutions of sulphate of zinc, &c., if properly injected with an efficient instrument, are very serviceable for this purpose. But unless the patient clearly understands how to employ them, they are thrown up only a short distance, and do not reach the roof of the vagina.

The walls of the vagina may be strengthened, and the uterus be in a measure raised fiom its altered position, by means of vaginal pessaries, whether of boxwood or caoutchouc; and until lately their employment was very general. About two months ago I saw one of the most efficient—a form of stem-pessary—which had been contrived by Dr. Blundell for a lady suffering from retroversion of the unimpregnated uterus. When first it was adjusted it afforded her much relief; but by and by a yellow discharge, with much irritation of the external organs, began to alarm her, and when I removed it I found the cervix uteri swollen, tender, and ulcerating; and I was obliged to advise its discontinuance. Pessaries which support the womb through the medium of the vagina are open to many objections. The irritation which they are liable to excite in the vagina and cervix-uteri, which in some women is intolerable, bring on diffuse inflammation, with copious puriform discharges, which decompose and become horribly fœtid; the practical difficulty of adapting them to the different conditions of the vagina, and the fact that they are often allowed to remain in the vagina for months, or even years, when they become either so firmly imbedded there as to require much cautious management to remove them, or ulcerate deeply into the contiguous portions of the vagina, and even perforate the bladder or rectum; have induced many obstetric practitioners altogether to dispense with them. I believe that I do not now use one, where, a few years since, I should have employed at least twenty.

The form of mechanical support which I have found most generally applicable is a firm, well-fitting, elastic abdominal belt, to which is attached an under perinæal pad. This pad may be either shallow or deep; it may cover a large or a small space, and be so firmly pressed against the perinæum as to afford a very powerful support both to it and the vagina. The only inconveniences which attach to it are, that some women cannot bear the heat of such a pad near the external organs, and it is rather annoying in the summer weather; but these are but trifling objections which are easily overcome. It is not to be expected, if a womb is loosely supported, that this simple apparatus will put it into its right place; but it seems to raise the uterus somewhat, and relieve the strain upon its ligaments, and tends very much to its subsequent re-position. The comfort which it affords is well-marked, and, practically speaking, it is a most valuable support, while at the same time it is an important safeguard against a still further displacement.

For my own part I greatly prefer this form of external pressure, with the use of astringents, to any other method which has come to my knowledge. Dr. Simpson's uterine supporter, the principle of which is theoretically perfect, and highly characteristic of the enterprising intelligence of its inventor, I must candidly say that I dare not use. I was very much struck at first with it, and thought that it would supply a most valuable aid, not only for retroversion, but also for long-standing cases of procidentia of the uterus. When I tried it, however, I found that it required a good deal of manœuvering to introduce it, and that it set up considerable irritation of the uterus, peremptorily demanding its removal. I do not doubt, after Dr. Simpson's testimony, that the uterus of some women will tolerate this local irritant; but the chance of exciting such symptoms as I have witnessed from it, is, in my mind, conclusive against its general adoption, especially when other unobjectionable resources are at our command. I do not attach the same importance as Dr. Simpson to the replacement of the womb as a means of reducing its volume; and I feel well persuaded that, supposing there be any such advantage from this replacement, it is more than counterbalanced by the evil of having an ivory stem retained within its cavity.'

Guy's Hospital Reports, October, 1848, *p*. 161.

163.—CASE OF SECRETION OF MILK IN AN OLD WOMAN, WITHOUT PREGNANCY.—Reported by the Rev. W. FITZPATRICK, Culdaff, County Donegal.

Bell Johnson was married to a man named Williamson. The fruit of this union was *eleven* children in the course of *eleven* years. *Three* times successively she had *twins*. Williamson died; and after a widowhood of three and a half years, she was married to her second husband, one Bryan M'Carron, who is still alive. They have had *four* children. The *youngest* child is about *eighteen* years old. She had none subsequently. Her present age is *sixty-one*.

On the 16th of April, in the present year, her daughter Eleanor died. This young woman was the oldest child of the second marriage.

Eleanor was married to one Andrew Porter; and, at the time of her death, left her only child, an infant of about nine months of age. Bell took charge of the infant, her granddaughter; and, (strange to say) has suckled the child for the last two months. I was anxious to ascertain whether irritation of the parts had caused the breasts to fill with milk. She states that she never offered her breasts to the child, and that to prevent the attempt that the babe might naturally make whilst in bed with her, she reversed her shift, putting the back part to the front. She states that she felt a pain in her breasts for about three days, and that they became full of milk. Having mentioned this to her husband, he advised her to suckle the child, regarding it as a special provision made by God for the motherless granddaughter. My opinion is, that during the old woman's sleep at night, the child had the nipples in her mouth, until continued irritation produced this curious effect. For the last eight weeks, this old grandmother, aged sixty-one, eighteen years after the birth of her own youngest child, constantly by night and by day suckles the child. If she allowed one breast only to the child during the night, the milk from the other would be flowing out in the morning, whilst it would be fully distended. Unless the milk be drawn, she suffers pain from the superabundant quantity. The quality of the milk is evidently not good. To the eye it appears very heavy, as an intelligent mother described it to me. The child is now about one year old, healthy, but very puny; its flesh very soft, and not much of it. A child of six months would be much larger, and certainly lustier and more blooming. The old woman is very poor, and does not obtain sufficient nourishment to sustain such a burden, whilst the child seems very difficult to satisfy.

The above facts I either heard from the woman herself, or can state from my own knowledge. I examined the breasts, after having seen the child frequently sucking, and found that, whilst easily emptied they soon filled. I found, for example, that the breast previously exhausted was much fuller than that last drained. The interval was short. The foregoing are the facts. I advised the woman to wean the child as soon as possible, for the reasons following. Whilst I fully satisfied myself as to the facts, so as to be sure there was no imposition, I found that the want of due nourishment, and the unnatural abstraction of strength, has been detrimental to the old woman, and that the milk was not of a kind to do more than keep the child alive. The deficiency was not in quantity but quality.

Dublin Medical Press, Aug. 30, 1848, p. 130.

164.—ON THE USE OF STRAMONIUM AS AN EMMENAGOGUE.—By Dr. B. Jones, Missouri.

[Dr. Jones believes that stramonium is a real emmenagogue, and that it is the only one we have. In illustration of its use, he gives the following case:—A lady had suppressed menses after an attack of fever, and notwithstanding the use of all kinds of medicines, the suppression continued. At the end of four years, she came under the care of Dr. Jones, who prescribed in the first instance a purgative. He says,]

After the operation of the pills, I put her on the tinct. semin. stramonii, prepared by the following recipe:—℞. Semin. stramonii, uncias iv.; alcoholis diluti, octantem unum. Digere per dies decem, et per chartam cola.

I directed her to take twenty drops, three times a day, for the first day, adding a drop to the dose each day, and to continue it, either until it pro-
s dizziness, vertigo, or the *catamenia*. In ten days after I first saw her,
summoned to her again, and learned that the day previous she had
enced evacuating blood from the bowels, in small quantities and at
lar intervals. I gave it as my opinion, that this was a vicarious eva-

cuation, and the harbinger of a regular catamenia *per vias naturales*, and directed her to suspend the medicine for two weeks, and then resume it again in the same dose last taken, (xxx gtt., ter die), to be increased as before directed, and to report to me in two weeks thereafter. At the expiration of the two weeks from the resumption of the medicine, she reported a regular and plentiful catamenia. From this time she was perfectly regular, until she became pregnant, and in due course of time was delivered of a healthy child. She entirely regained her health, and has subsequently borne two other children.—*Western Jour. (Amer.)*

Dublin Medical Press, July 19, 1848, p. 40.

165.—CASES OF HYSTEROCELE.—By Joseph Bell, Esq.

[Hernia of the uterus, whether inguinal, femoral, or ventral, is a very rare occurrence, but Mr. Bell has met with two cases.]

Case 1.—June 2, 1843. I was requested to visit Mrs. P——, who had been eight days previously delivered of her fifth child, I found her much exhausted; pulse quick and small. She complained of intense pain of abdomen, on examining which the uterus was found protruding through a rent in the linea alba, extending from pubis to near ensiform cartilage. A portion of intestines was also protruded, but these were easily reduced; with the uterus, however, more difficulty was experienced. Compresses and bandages were applied, but had to be removed in consequence of the aggravation of pain which the pressure caused.

The patient died on the 4th instant. No post mortem inspection was permitted. She was a tall slender person, of a very relaxed frame; so far as I could ascertain, the hernia had no existence previous to her last confinement.

Case 2.—On the 5th of May, 1846, I attended Mrs. M——, at her fourth confinement. At 5 o'clock A.M., after a tolerably severe labour of sixteen hours' duration, a fine female child was born. As soon as the cord was separated, and the child handed to the nurse, in accordance with my usual practice, I applied my hand to the abdomen, when, to my astonishment, I found the anterior superior part of the uterus protruded through a rent in the linea alba, which was completely torn through from the ensiform cartilage to pubis. The uterus felt so large and firm, that little doubt existed of its containing another child.

On making a vaginal examination, a second set of membranes was detected, on rupturing which the child was ascertained to present with nates to mother's abdomen. The uterus was pressed back into the abdominal cavity, and firmly maintained in this position with both hands until the child (a male) was born; this occurred half an hour after the first birth. The conjoined placentæ came away immediately—the uterus contracted firmly, and descended into the hypogastrium. A compress was placed on each side the rent along its whole extent, and a bandage firmly applied. A smart attack of peritonitis occurred, but it was fortunately subdued by the ordinary treatment. Three months after delivery I carefully examined the abdomen, and could detect no trace of the rupture.

This woman is of small stature. The great distention to which the abdominal parietes were subjected from the uterus containing two very large children, must have stretched the fibres of the linea alba to the utmost extent, the contraction of the abdominal muscles during labour producing the complete separation of the tissues. The only circumstance which I noticed attending the rupture, was, that almost immediately before birth of first child, the patient complained of a burning pain in the abdomen and a sensation of faintness; but as the child's head was at this time partly protruded through the os externum, and the complaint being made during the pain by which the head was wholly expelled, no attention was given to her statement.

I find a case related by Boivin and Duges very similar to that of Mrs. M——: A woman who had been in labour three days, experienced on a sudden violent pain, with a sense of laceration in the abdomen, followed by extreme weakness. J. L. Petit found, on examination, a ventral rent or rupture extending from the umbilicus as far as the pubis, and another from the umbilicus to the ensiform cartilage. The lower one was so considerable that the recti muscles were separated from each other by a distance of nine or ten inches, allowing the uterus to completely protrude.

Monthly Journal, July, 1848, *p.* 12.

166.—ON MEDICATED PESSARIES.—By Dr. J. Y. Simpson, Edinburgh.

In diseased states of the cervix uteri and vagina, medicinal substances had been applied locally to those parts under various forms, but principally, either in a solid state (as nitrate of silver, potassa, &c.,) or in a liquid form (as in the great varieties of medicated injections in common use in leucorrhœa, &c). When thus used, the local application was temporary, and applied for a few minutes only. But in various forms of disease it seemed an indication of no small importance to have the medicated substance applied continuously, and not temporarily. Medicated pessaries, which Dr. Simpson had first introduced into practice several years ago, and which had since been extensively adopted by various practitioners in London and elsewhere (see description of them published by Dr. Stafford Lee, Dr. Oldham, &c.,) enabled us to fulfil this indication. By their use, for instance, we could keep the cervix uteri, when ulcerated and indurated, constantly embedded in mercurial or iodine ointment for weeks, and sometimes with the most marked benefit and success. They fulfilled another indication in cases of irritation and inflammation of the mucous membrane of the cervix uteri and vagina. They kept the opposed diseased surfaces from coming in contact, and it was well known how important a matter this was in the pathology of mucous and cutaneous surfaces.

Dr. Simpson had been in the habit of applying a variety of substances in the form of medicated pessaries, particularly zinc and lead ointment, &c., as simple emollients; mercury and iodine as discutients (and particularly the iodide of lead); tannin, alum, and catechu, as astringents; opium, belladonna, &c., as anodynes. The pessaries were made of the size of walnuts, and could be easily introduced by the patients themselves; one or two in the twenty-four hours. They were composed of the medicine used, mixed up in the form of an ointment, and brought to a requisite degree of consistence with one or two drachms of yellow wax to the ounce of ointment. Messrs. Duncan and Flockhart, druggists, had found the following proportions requisite in the subjoined forms, (those in most frequent use in Edinburgh); and they might serve as models for the others. After being made up in the proper form, they were usually coated by the druggists with a firmer covering, by dipping them into an ointment made up with wax and resin, kept liquid by heat. About an ounce of the different ointments made four balls.

1. *Zinc Pessaries.*—℞. Oxydi zinci ʒj, ceræ albæ ʒj, axungiæ ʒvj, misce, et divide in pessos quatuor.

2. *Lead Pessaries.*—℞. Acet. plumbi. ʒss, ceræ albæ ʒiss, axungiæ ʒvj, misce.

3. *Mercurial Pessaries.*—℞. Unguent. hydrarg. fort. ʒij, ceræ flavæ ʒij, axungiæ ℥ss, misce.

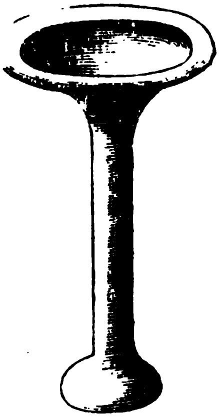
4. *Iodide of Lead Pessaries.*—℞. Iodidi plumbi. ℈j, ceræ flavæ ℈v, axungiæ ʒvj, misce.

5. *Tannin Pessaries.*—℞. Tanninæ ℈ij. ceræ albæ℈v, axungiæ ʒvj. misce.

6. *Alum and Catechu Pessaries.*—℞. Sulph. aluminis ʒj, pulv. catechu ʒj, ceræ flavæ ʒj, axungiæ ℥vss, misce.

7. *Belladonna Pessaries.*—℞. Extr. belladonnæ ℈ij, ceræ flavæ ʒiss, axungiæ ʒvi, misce. *Monthly Journal, June*, 1848, *p*. 886.

167.—NEW FORM OF PESSARY.—By Dr. Weir.



[At a meeting of the Edinburgh Society,] Dr. Weir exhibited a pessary for prolapsus of the uterus, which he considered useful from its cheapness, its lightness, and the facility of its introduction and retention. It was composed of a slender stem of light wood, from two to three inches in length, surmounted by a shallow cup (see figure), on which the cervix of the uterus rested. The lower end of the stem was furnished with a small knob or button, which, when the instrument was *in situ* rested on a simple T bandage. This form of pessary had been used for some years by Dr. Weir, and by many others with the best results.
Monthly Journal, Sept., 1848, *p*. 198.

168.—CURE FOR "NURSES' SORE MOUTH."

Dr. H. D. Holt states (New York Jour. of Med., May, 1848), that every case he has treated of this disease "has yielded within forty-eight hours to the use of iodide of potassium in gr. v. doses three times a day."—*American Journal of Med. Sciences, July*, 1848.
Medical Gazette, Oct. 6, 1848, *p*. 574.

169.—ON THE TREATMENT OF SORE NIPPLES.

The tincture of catechu holds a high place, and has been found a very excellent astringent; like the other remedies of this class, it is best adapted for the simply excoriated or abraded nipple. Nearly similar to it is the solution of pure tannin, so highly recommended by Mr. Druitt. It is made by dissolving five grains in an ounce of distilled water. We have not observed it to possess any superiority over the catechu, except in being more cleanly. The following is a favourite lotion with Dr. Johnson, who has been in the habit of using it for many years:—

℞. Sub-borat, sodæ, ʒii.; cretæ precipitat., ℥i.; spiritus vini, aquæ rosæ, aa ℥iii. M. fiat lotio.

This may be applied alternately with the following ointment, or the latter may be used alone:

℞. Ceræ albæ, ℥ivss.; ol.. amygdal. dulc. ℥i.; mellis despumat. ℥ss.; Dissolve ope caloris, dein adde gradatim, bals. peruviani, ʒiiss. M. fiat unguentum.

In some cases we have seen benefit result from the use of tincture of galls and compound tincture of benzoin (Friar's balsam), in equal proportions.

It is always well to have in mind a number of these different preparations, for it not unfrequently happens that one will answer our purpose when others have failed. For fissured nipples some authors strongly advise the application of solid nitrate of silver; but our experience does not permit us to speak of it. Dr. Johnson thinks it sometimes a good remedy in such cases, at a remote period from delivery; but that during the puerperal state its use is not advantageous, as it is apt to be followed by mammary abscess. *Medical Gazette, Sept.* 29, 1848, *p*. 556.

170.—ON LYMPHATIC TUMOUR OF THE BREAST.—By Dr. J. M. Coley, Physician to the Western Dispensary, &c.

The absorbent vessels on the upper part of the breast leading to the axilla, are subject to a disease characterized by a painful, tender, and irritable swelling, and consisting of several cord-like indurations, at some times disposed in parallel rows, at other times connected after the manner of an anastomosis. Other parts of the breast are occasionally the seats of this affection; and in whatever situation it occurs the swelling is transverse, following the direction of the absorbents towards the axilla. On a superficial examination the tumour may escape detection; but it can always be discovered by taking the suspected parts between the fingers and thumb. When the pain and tenderness are extreme, the absorbent glands in the axilla, and more rarely below the clavicle, become enlarged from irritation. These glandular enlargements always disappear after the original disease has subsided: the lymphatic swelling in the breast also frequently retires, leaving no vestige behind it. In extreme cases, however, a permanent thickening takes place, occasioned by the deposit of lymph in the cellular membrana. This disease usually attacks females between the ages of fifteen and thirty-five, and is liable to recur repeatedly, where the constitution is in the peculiar state predisposing to it.

The condition to which I allude is that of comparative emaciation, accompanied with irregular or deficient menstruation, depression of spirits, and general debility. Hence suckling and chlorotic women are most frequently the subjects of attack. In some instances the patients are inclined to attribute the origin of the disease to external violence; in the majority of instances, however, if not in all, it has appeared to me to proceed from imperfect menstruation. In one instance I had an opportunity of examining the uterus in a patient labouring under this disease, when I found the posterior portion adjoining the cervix in a state of congestion, presenting to the finger a doughy or anasarcous feeling. The size of the tumour in the mamma varies from that of an almond to that of an adult thumb; and the pain and tenderness attending it are of a remittent character. In some rare cases it attains nearly the size of a pullet's egg in large and plethoric mammæ.

One of these tumours, which was removed at the earnest solicitation of the patient, who had suffered severely from repeated attacks of the disease, was found, on examination to consist of thickening of the coats of the lymphatic vessels, imbedded in a stratum of condensed cellular membrane.

As this affection is dependent on the state of the general health, and particularly on an imperfect performance of the periodical function of the uterus, its duration is uncertain. I have known it return in the same individual, and as repeatedly subside under proper treatment; and it must be observed that the swelling, pain, and tenderness, in most cases, uniformly undergo an increase on the approach of menstruation. The natural termination of the disease in severe cases, when the special treatment adapted for its cure is not employed, is in a painful and obstinate ulceration, which in external appearance has a considerable resemblance to that proceeding from scrofula, the absorbent glands in the vicinity being enlarged, tender, and painful, and the discharge copious. Before ulceration commences, the cellular membrane subjacent to the skin becomes indurated; this induration is gradually softened, the skin assumes an inflamed appearance, and a small chronic, scrofula-like abscess is the result. The ulcer which follows resists all local treatment until the proper constitutional remedy is adopted.

Diagnosis.—The discrimination of this disease from others resembling it is not difficult. From the chronic mammary tumour, described by Sir A. P. Cooper, it may be distinguished by the pain and extreme tenderness, by the vitiated state of the patient's health, by the absence of lobes and of any cyst, and by the disease invading the breast of suckling women, more frequently than those of virgins. The condition of the uterus, too, is widely different; in the mammary tumour, a state of excitement prevails; in the lymphatic tumour, a deficient circulation takes place in that organ, manifested by the discharge of an imperfect secretion, or false membrane, from its mucous surface.

From the irritable tumour, and neuralgic state of the breast, this disease may be known by the transverse, parallel, or anastomising, cord-like bands, which are always present, by the remission of the pain and tenderness, and by the latter symptoms being confined, as far as regards the breast, to the immediate locality of the tumour. The diagnosis in the examination of very large breasts is sometimes difficult.

Treatment.—When the pain and tenderness are excessive, leeches and evaporating poultices may be applied to the integuments over the tumour. In general it will be found unnecessary to adopt any local remedies, as the pain is not acute, but usually of an aching kind, like that accompanying rheumatism or phlegmasia dolens. The patient should take some preparation of iron twice daily, have the bowels relieved by an aloetic aperient, if needful, and use a generous diet, and gentle exercise in the open air. Should suckling have been long continued, the infant should be weaned, especially if the patient has been the mother of many children. By attending to these directions the tumour will entirely disappear in a few weeks, or all uneasiness will be so far removed that the patient will feel no inconvenience from it, unless the constitutional and uterine derangement should recur. *Lancet, May* 27, 1848, p. 579.

ADDENDA.

171.—ON CHOLERA.

[Out of the innumerable papers on cholera which have appeared in the Medical Journals, within the last six months, we have selected the following as among the most practical and useful. We would also refer the reader to some very interesting and practical papers on the same subject in our last Part, by Messrs. French, M'Coy, and Thorn, and Drs. Bell, King, Massy, Turnbull, Ward, and Watson. It would be useless at present to occupy our pages with the different views which have been published respecting the supposed pathology of this disease. A few introductory remarks, however, may not be inappropriate.]

Dr. Laycock, York:—

[After remarking that the main questions at issue respecting cholera are apt to be lost sight of in discussions respecting the mode of transmission of the virus, and minute details "as to the escape of one person from the disease, and the attack of another by it," Dr. Laycock proceeds to say:]

What are the universal facts observed with regard to cholera? In the first place, many are attacked, but a greater number escape—and why? See what an important question this in prophylaxis: for if you can put a whole population into the same situation as that portion is in, which escapes, the disease is extinguished. In the next place, as a general rule, it begins with sporadic cases—droppings, as it were, before the thunder shower—in the locality about to be affected; and it gradually increases in intensity until it attains a climax, and then declines—and why? Here is another important question; for if we can induce the same circumstances at the outset, which occur at the decline of the disease, it need never appear except sporadically.

Let us first fix the meaning of terms to be used in our inquiry; for I believe three-fourths of the confusion which arises in the discussion, as to the spread of febrile diseases, arises from a misapprehension of terms. I have just used the term *sporadic*, it means scattered, dispersed, *disseminated*, (*Græce*), cases, one dropped here and there, like seeds; thus, variola or scarlatina may be sporadic—there being a few dropping cases here and there. But if circumstances favour their spread, and if there be a number of persons predisposed to be acted on by the contagious principle, then they will become *epidemic*—that is to say, *generally prevalent among the people:* for that is the meaning of the term. So, then, a disease is epidemic when it is generally prevalent, whether it be contagious or not. But what do I mean by contagion, you will ask? Why this—that there is a *materies*, either solid or gaseous, given off by or from the bodies of persons labouring under a disease, which is received into the blood of another person, and which, (if when received) it produces a morbid change in the blood, that change is followed by morbid phenomena, like those under which the originally diseased person laboured. Without these conditions there can be no contagion. Strictly speaking, the term means the communication of the poisonous *materies* by actual contact; but if the poison be in the atmosphere (as it is in the majority of contagious fevers), still it comes to the blood by contact—in fact, we may say by *direct* contact through the lungs. Contagion, then, or the production of the disease can only be *conditional;* if it were absolute and unconditional, the human race would by this time have been exterminated. Fortunately, the conditions the concurrence of which is necessary are so numerous, that it is only at intervals that that concurrence takes place and fever becomes epidemic at all, and even then only a fraction of the population are subject to its influence by presenting the necessary conditions. As the whole force of prophylaxis must, I think, be directed to the removal of these conditions, let us consider what they are.

[Dr. Laycock assumes, without discussing the point, that cholera is a contagious disease in the sense thus laid down. He then remarks, that as the *materies morbi* is generated in a diseased person, our *first* rule of prevention is to hinder *contact* of the diseased with the healthy; in other words to enforce quarantine. And, *secondly*, as quarantine regulations will only *delay* the progress of the disease, the next step is to hinder the *transmission* of the poison from the sick to the healthy. It is pretty certain, Dr. Laycock thinks, that this transmission is facilitated by a damp atmosphere, which probably holds the poison in solution. He says,]

'This being the case with the poison of cholera, not only will there be a more ready transmission through a damp atmosphere, but a larger quantity will enter the system at a given time, and in proportion to the quantity taken will be the poisonous effect. Cholera will, therefore, spread more rapidly—that is to say a *greater* proportion of persons will be attacked in a *less* time, in a low damp locality than in a dry high situation. The means of prevention in this case is to dry the air by every possible means, or else that the damp locality be abandoned; the latter would certainly be the most efficacious, though seldom practicable. The bedding and clothes of the patients and attendants should be kept perfectly dry; dry heat should be used in every possible way, and all open vessels containing water removed altogether from the apartment. Effective draining should be carried out: stagnant pools filled up with some dry absorbent material, to prevent the transmission of the poison to a distant locality (which I believe may be done by packing up some damp clothes fresh from a cholera patient, in a well-fitting box, and transmitting them per rail or otherwise); all articles of clothing should be exposed to as high a temperature as they will bear in a dry atmosphere; a blast of hot dry air upon clothing of this kind will, I have reason to think, effectually destroy the poison.

You may also dilute the poisonous atmosphere by frequently changing it, that is to say you must *ventilate* well. If you can ventilate with dry air, it will be better, but you had better use damp air freely, rather than shut up the poisonous atmosphere. You should prevent many persons being near a patient, or even crowding their apartments, for they not only abstract oxygen from the atmosphere, and displace a certain proportion of it, but they load it with vapour derived from their lungs.

[But, do what we will, we cannot entirely prevent the transmission of the poison from the diseased to the healthy. It will be absorbed into the blood of many in whom the symptoms are never manifested, in the same way as other fever-poisons, small pox or scarlatina for instance, are received, and yet do not act upon the system, because all the conditions necessary to their action are not present. In those cases where the cholera-poison does not act upon the blood, in accordance with its nature, in eight or ten days, Dr. Laycock thinks it probable that it is eliminated from the system by the excretions, probably through the mucous membrane of the intestines, a little diarrhœa being excited by it. The *third* rule of prevention, therefore, is, to facilitate the excretion of the poison, a principle which, Dr. Laycock observes, has been neglected alike by contagionists and non-contagionists. He says:—]

I apprehend persons in perfectly good health, and using ordinary care in keeping so, will always excrete the poison and never have cholera: nature is quite sufficient, under these circumstances, to take care of herself. I apprehend, too, that persons only in moderate health, who attend to the ordinary rules of hygiene, will excrete the poison with very little constitutional disturbance—having, perhaps, a slight febrile attack ending in perspiration, or slight diarrhœa. These have the cholera, and may *communicate it*, too, totally unaware of the fact. Now, of course, popularly speaking, diarrhœa is not cholera; but technically speaking, it is quite as much an effect of the poison as the more violent symptoms; just as mercurial erethism is quite as much a symptom of poisoning by mercury as ptyalism or diarrhœa. And here let me advise you not hastily to conclude that the ordinary symptoms of cholera are the *only* symptoms produced by the poison; it may, and I believe does, produce symptoms altogether different from its commoner effects; and this is the case with all poisons whatever. The poison of erysipelas, for example, will excite puerperal fever. You may have measles without catarrh—scarlatina without a rash; and this leads me to remark how necessary it is to use the greatest caution in your conclusions as to the symptoms produced by febrific poisons, and always remember that *one-half, at least, of their natural history is entirely unknown.*

If, then, when the cholera is epidemic, you have a patient with slight diarrhœa, but especially with rice-water stools, act as if the enemy were upon him. Now I dont think you should *instantly* check the diarrhœa, for I suspect it is an effort of nature to carry off the poison—not the diarrhœa, but that the poison is passing out by the intestinal canal, and irritating it as it passes. Moderate the irritation by gentle opiates; set up other excretions, as by the skin and kidneys; give your patient plenty of demulcent drinks, and of free pure air; charge him, as he values his life, not to irritate the gastro-intestinal mucous membrane, and, as an antidote to the poison in the blood, give a few doses of quinine, or the vegetable acids. The best formula perhaps would be, a grain or two of amorphous quinine with two or three grains of tartaric acid and a few minims of laudanum every six hours.

But suppose your patient have already disorder of the excretory organs, so that the blood is not depurated in the ordinary course of events, you have then a dangerous state of things, and one which will demand all your skill, *if* the greatest can be of any avail. If your patient have chronic disease of the intestinal mucous membrane, or of any of the principal viscera, but especially of the liver or kidneys, his exposure to the poison will most probably be followed by a violent if not fatal attack. You must therefore warn him to adopt all possible means of avoiding contagion. Patients with chronic disease of the liver and intestinal mucous membrane, and especially with Bright's disease of the kidneys—drunkards belong to this class—will suffer far more than any other class; and I am inclined to think few such receiving the poison will recover.

The exemption of persons engaged in chandleries and tanneries from the disease, points out their atmosphere as being prophylactic,—why, I cannot say. Persons highly predisposed, from the causes stated, might avail themselves of this hint. I am assured that the emanations from tallow are obnoxious to insect life, and therefore they have some virtue or activity as yet unknown to us, and are widely different in their nature from mere putrid emanations.

Now you may have all the functions going on with tolerable regularity, or at least without any marked irregularity, further than the sort of ill health which deficient diet, defective supply of atmospheric air, and the presence of malarious poisons, may excite, and yet such person be highly predisposed to disease. Anything which lowers the tone of the system will give the poison activity: thus a great number of persons may have already received the poison into the blood, and it remains latent until the depression which precedes a heavy thunder-storm, or a fatiguing journey—as a march of troops, or the want of a meal, or excess in a meal after a long fast, will at once develope the morbid action of the poison. Those examples in which a number of persons have been exposed to the poison at the same time, and then to such an exciting cause as the preceding at the same time, have presented great difficulties to a sufficient explanation, and have been called "nuts for contagionists" to crack; but you will, I think, find no difficulty in them whatever, if you have a clear comprehension of the whole subject.

The miasmata given off from feculent *debris*, as from privies or accumulations in the sewers, act as a poison, as I have previously shown, on the intestinal mucous membrane; and, consequently, persons breathing air impregnated with such emanations are peculiarly liable to be rapidly affected by the poison of cholera. The reception of the latter is but the application of the match to a train already laid. I need not, I think, observe, that the removal of feculent accumulations, and of animal and vegetable debris, is an important point in prevention.

All the depressing emotions enable the poison, when received into the blood, to conquer the reaction of the organism against it, and to overcome the *vis conservatrix*. You will hear of people taking fright at the cholera hearse, or something of the kind—hardly suffering from diarrhœa perhaps—and go home, lie down, and die in all the agonies of the disease. Now such persons, if they had not had their vital powers so depressed by terror, would have resisted the action of the poison; for rest assured, that when a person dies of Asiatic cholera, he must have received a specific poison into his blood, however difficult it may be to account for the communication or reception of it. You might as reasonably say, that a person with small-pox had never received the contagion of small-pox.

What are the circumstances that lead to the decline of the epidemic? In the first place, all persons who have had an attack do not seem *immediately* liable to a second: then the highly predisposed have either died or had it; so that, like a fire, it dies out for want of fuel; or, thirdly, an atmospheric change may conjoin with the preceding, and the air becoming very cold and dry, puts a stop to the development of predisposing miasmata, and the more ready transmission of the poison. It is in this way all epidemics whatever come to a close, whether arising from miasm or contagion.

The grand object, then, in the prevention of cholera, is to remove as many of the predisposing causes as you can. Many of these are entirely within the power of man—indeed, all the most important: I mean those emanations which arise from over-crowding or decaying debris, &c. With regard to cachetic and visceral disease, you can do little.

Medical Gazette, *Oct.* 27, 1848, *p.* 696.

Dr. W. G. Maxwell,† Calcutta:—

The Progress of Symptoms.—What is cholera? is a question that has been asked a million times.

Cholera is the first stage of fever; the fever of a particular locality—the endemic fever, or the epidemic fever.

Fever is made up of various stages; the collapse stage, the shivering stage, the hot stage, and the sweating stage. All or each of these may be morbidly increased, constituting apparently different diseases, but in reality linked together in inseparable union. It is the morbid increase of the first of these that I have now briefly to consider, viz., cholera morbus.

Here the fever never rises higher, it never reaches the shivering or the hot stages; if it does, it is no longer cholera; the fever has passed from the collapse into the other stages. Those who have had ague will comprehend the term "collapse of fever." They will recollect having had the paleness of the hands, feet, and countenance (and these generally tipped with blue); they will recollect the cold smooth feeling of the hands, the nervous sensations about the chest and stomach, and extending over the system. These, all, or partly present, constitute what I call the "collapse of fever;" and this collapse of fever (in excess) is cholera morbus.

During the prevalence of the epidemic constitution, if an individual sojourn in a locality notoriously febrile, he will imbibe (what I will call for the easier comprehension of the reader) the epidemic leaven or ferment. Now, this ferment will take some time to display its full action, varying according to the quantity taken into the system; but it is generally in the middle of the night following that the effects are displayed; and it is an equal chance whether the individual sinks in the first or collapse stage, or rises from it into fever; hence the explanation of those cases, found in the morning in a high state of fever, which had been first reported as instances of cholera.

The development of the stages of fever entirely depends on the changes the leaven has effected. If this change has been such that the blood has become too thick to flow through the lungs, then, as a matter of course, the collapse stage is developed in excess; in other words, cholera asphyxia is exhibited. The blood, unable to pass through the middle passage into the arteries, collects and swells out the veins, giving that deadly or blue colour to the skin. When the vomiting and spasms come on, this mass of blood in the veins is squeezed with great force, and hence the clammy moisture that is forced from every part during these fits. There is no pulse, because there is no blood in the arteries. There are also lethargy and langour, and oppression in breathing, caused by the blood being all collected in the veins. These make up the principal links of the chain of mechanical symptoms. The other train of symptoms and associate symptoms arises directly from the stomach and bowels. I cannot say which are the most important; the neglect of either may be fatal. They. like the former, spring from the influence of the epidemic leaven. When the blood begins to thicken, that same moment all the functions begin to go wrong. The most important of all the functions, digestion and assimilation, are the first to feel the influence; in fact, it is difficult to define priority; the influence must be immediate, being part of the same circle. The derangement of these functions and the depravation of the blood advance mutually, as a matter of course; neither the one furnishing secretions to the bowels, nor the other nutrition to the blood. The inevitable, invariable consequence of this is the establishment of fermentation of the contents of the stomach and bowels; the abdomen becomes swelled, and the stomach and bowels more or less uneasy; and this uneasiness increases exactly in proportion to the completeness of the changes the alimentary matters undergo.

Nausea advances rapidly, followed by vomiting and purging; and, if there is not a free discharge both ways at first, spasms are induced by the irritating fermenting matters remaining in the intestines; if these are in the stomach or upper portions of the bowels, the spasms will be in the chest and upper extremities; if in the lower part of the canal, the spasms will be in the inferior extremities. Examination after death reveals the origin of these spasms in the mucous membrane of the bowels; it is found more or less destroyed in various parts, or covered with ulcerations in protracted cases. The contents of the bowels are found in a putrid state; there are no healthy secretions, and not a particle of bile—the preserving fluid of the intestines, the register of putrefaction. The moment it disappears, fermentation and putrefaction advance rapidly. Its absence is one of the links in the great chain; as also are all the effects resulting therefrom. There is not a single secretion carried on in fully formed cholera for this plain reason, that there is no circulation, the blood is too thick to pass through the middle passage into the arteries; it remains in the veins, and during each fit of vomiting and spasm it is squeezed, as in a cheese-press, and the clammy moisture forced from it at all parts. Hence observe the chain of actions: the leaven leavening the mass, thickening of the blood, stoppage of digestion, fermentation of the alimentary matters, irritation of the mucous membrane, vomiting, purging, and spasm, all reacting, as it were, on the first symptoms, and increasing the thickening of the blood; all, in fact, parts of the chain linked together in inseparable union.

[The treatment of cholera is illustrated by Dr. Maxwell by an account of an attack from which he himself suffered. He had not been able to think of any appropriate remedy, and was denying himself the use of cold water, from an impression that it would be dangerous. At last, he states:]

The thirst, however, became worse and worse, and I determined to relieve it at all hazards, and not add misery to death. Having made up my mind, the next point was the choice of the particular beverage; there was plain water, whey and barley-water, gruel, congee, &c., wine and water, brandy and water, &c. To the last of these I had a repugnance, as every one has in fully formed cholera, and the others would require time and direction for their preparation, which my disease was not able to afford or I to give. Whilst thus ruminating my eye accidentally fell upon a packet of effervescing soda-powders standing among a crowd of other remedies and nostrums on the table. It immediately took my fancy; it struck me as the very thing I wanted, and without further delay pointed to it, and made signs for a copious draught thereof. It was soon made and soon swallowed; it was extremely refreshing and agreeable, and the thirst was allayed; no nausea succeeded, and the pleasing anticipation remained of having a repetition of the draught whenever I desired. This I was not long in desiring; in fact, almost immediately after I swallowed another, and continued repeating it whenever the thirst became urgent. Instead of retrograding or remaining stationary, I began to improve; the stools became easier, and the spasms less vigorous and vicious.

I experienced an inclination to sleep, a desire to be covered up, and for something hot to drink (these are the best signs, they point out the disease escaping from the collapse stage). I had a large tumblerful of very warm but weak brandy and water made, and drank it off. I fell asleep, and had five or six hours of profound repose. I awoke bathed in perspiration, and, with the exception of a little stiffness and considerable thirst, I felt perfectly well. The thirst was again relieved by the effervescing draughts, and I followed up the principle with a couple of dishes of that most delectable and pre-eminent of all stomachics, tea.

Here ends my case, with the remarks thereon and inferences therefrom. I have only attended to the display of the principle of cure as best I could.

Were I to begin with remedies, I might write till this time next year without advantage.

I do not say that the effervescing draught is the only cure, but it is one which carries out the principle as well as any I know, and it is agreeable and refreshing, and allays the thirst; can be taken in any quantity, and is efficacious. I have given it in various instances, in every stage, always with advantage to the disease and gratification to the patient; but from these only I do not judge, it is from having taken it myself, as I have described, that I feel authorized thus to speak regarding it.

Bleeding, both general and topical, may be necessary in cholera when there is much oppression, restlessness. pain, spasm, blue skin, or asphyxia; neither were necessary in my case. People do not die from being bled, even when unnecessary, but from bleeding being trusted to alone, while the principle of cure I have pointed out is not followed up.

Sinapisms and blisters to the legs, &c., for the relief of spasms are unnecessary; the origin of the spasms is in the intestines, as I have pointed out. Hot fomentations to the loins and stomach relieve the spasms of the legs. The wishes of the patient should be strictly attended to; nature is the best physician: if he wishes for cool air he must have it; if he desires to be covered up he must be so; many perish from being too much covered up at first, when the fresh air would revive them. Calomel and opium may be necessary in some cases; in mine they were not, therefore were not used. From it may be defined the nature of those cases that might require their administration. No harsh remedies will do in cholera; all must be of the mildest description—such as will pass in quantity gently along the bowels to remove the fermenting matters; and, above all, they must be such as will be relished and eagerly desired by the sick, and such as can be constantly taken for the relief of the urgent destroying thirst constantly present from the commencement of the disease.

Recapitulatory Summary.—I have endeavoured to make this key as concise as possible, consistent with utility. I think it will be found to embrace the most important points connected with the disease. Of all these, the irritation of the stomach and bowels claims the first rank; it is caused by the presence of fermented matters. The cure cannot be accomplished until they are removed, or their acrimony blunted; and this must be effected in the gentlest manner by copious diluents, as I have pointed out. I took, in my own case, the effervescing draughts, and I found them answer admirably; they were delightfully refreshing, and they passed gently downwards, removing the irritation in the bowels. I was solely guided by the thirst; it no sooner returned than I swallowed another tumbler-full of the effervescing draught. After taking fifteen at least of these, always with relief and gratification, the disease began to rise through the other stages, indicated by the wish to be covered up, and for something hot to drink, as I have already described.

I will not say a word on the question of bleeding; it is impossible to lay down a fixed rule on this head, or to explain, within the limits of an epitome like this, all the circumstances connected with it; suffice it to say—1. That, if the natural diluent system is early had recourse to, bleeding will seldom be necessary. 2. That bleeding alone will not cure the disease—for this plain reason, that it cannot remove the fermented irritating matters from the bowels. 3. That the natural diluent system, if early and steadily persevered in, not only removes this irritation, but likewise prevents the further thickening of the blood. If these conditions and their effects, however, from the neglect of diluents or other causes, have become urgent, let blood be taken away; it will flow if diluents are now freely given, and the surface kept moist, according to the wishes of the patient.

Medical Times, July 22, 1848, p. 185.

Poor Law Commissioners:—

[The following are the suggestions made by the gentlemen appointed by the Poor Law Commissioners to inquire into the condition of the metropolitan poor-houses with respect to cholera.]

1. We would urge the necessity in all cases of cholera, of an instant recourse to medical aid, and also under every form and variety of indisposition; for during the prevalence of this epidemic, all disorders are found to merge in the dominant disease.

2. Let immediate relief be sought under disorder of the bowels especially, however slight. The invasion of cholera may thus be readily and at once prevented.

3. Let every impurity, animal and vegetable, be quickly removed to a distance from the habitations; such as slaughter-houses, pig-sties, cesspools, necessaries, and all other domestic nuisances.

4. Let all uncovered drains be carefully and frequently cleansed.

5. Let the grounds in and around the habitations be drained, so as effectually to carry off moisture of every kind.

6. Let all the partitions be removed from within and without habitations, which unnecessarily impede ventilation.

7. Let every room be daily thrown open for the admission of fresh air; and this should be done about noon, when the atmosphere is most likely to be dry.

8. Let dry scrubbing be used in domestic cleansing, in place of water cleansing.

9. Let excessive fatigue, and exposure to damp and cold especially during the night, be avoided.

10. Let the use of cold drinks and acid liquors, especially under fatigue, be avoided, or when the body is heated.

11. Let the use of cold acid fruits and vegetables be avoided.

12. Let excess in the use of ardent and fermented liquors, and tobacco, be avoided.

13. Let a poor diet, and the use of impure water in cooking, or for drink, be avoided.

14. Let the wearing of wet and insufficient clothing be avoided.

15. Let a flannel or woollen belt be worn round the belly.

N.B.—This has been found serviceable in checking the tendency to bowel complaint, so common during the prevalence of cholera. The disease has in this country been always found to commence with a looseness in the bowels, and in this stage is very tractable. It should, however, be noticed that the looseness is frequently unattended by pain or uneasiness, and fatal delay has often occurred from the notion that cholera must be attended with cramps. In the earlier stage here referred to, there is often no griping or cramp, and it is at this period that the disease can be most easily arrested.

16. Let personal cleanliness be carefully observed.

17. Let every cause tending to depress the moral and physical energies be carefully avoided: let exposure to heat and cold be avoided.

18. Let crowding of persons within houses and apartments be avoided.

19. Let sleeping in low or damp rooms be avoided.

20. Let fires be kept up during the night in sleeping or adjoining apartments, the night being the period of most danger from attack, especially under exposure to cold or damp.

21. Let all bedding and clothing be daily exposed during winter and spring to the fire, and in summer to the heat of the sun.

22. Let the dead be buried in places remote from the habitation of the living.

By the timely adoption of simple means such as these, cholera or any other epidemic will be made to lose its venom; so true it is that "Internal sanitary arrangements, and not quarantine and sanitary lines, are the safeguards of nations." *Lancet, July 22, 1848, p.* [illegible]

Dr. Henriques:—

[Considers that cholera resembles miasmatic congestive fever in its intrinsic nature, and recommends the administration of quinine as soon as the prominent symptoms are developed: and as a prophylactic, in addition to the regimen ordinarily prescribed, he advises that two grains of sulphate of quinine be taken every morning for six or seven days, then suspended for the same period and again resumed, and that this plan be followed as long as the epidemic lasts.]

Dr. Kennedy, of Woodhouse, Leicestershire:—

[Recommends camphor and laudanum in small doses, antiseptic fumigations, and frictions with stimulating liniments.]

Mr. M. T. Sadler, Barnsley:—

Says, "that we have, from facts, very strong evidence to lead us to assign the specific cause of malignant cholera to some secret emanation from the lower parts of the earth, and that it is probably some agent analogous to electricity.

If there are *magnetic* storms, why should there not be *choleric* storms? To be able to account for the irregularity of earthquakes, volcanoes, or the motions of the magnet, science must pierce to the depths below, and be able to watch the mighty operations there going on. This, however, is beyond its reach; but amongst other conjectures, if we suppose there is, as Humboldt suggests, a molten mass of nearly eight thousand miles in diameter, within twenty-one miles below our feet, (put in motion, it may be, by the influence of the sun and moon), we may then suppose an agent generated by some action of those perhaps perfectly-unknown materials, that may account for the dreadful malady which is the subject of my paper: and the varying nature of the strata of which the earth is composed may conduct it in an irregular form and manner to its surface."

The idea has been entertained by other persons, who have, however, not canvassed the subject at such length as Mr. Sadler: and doubtless in investigations into the still mysterious origin of cholera, and circumstances predisposing certain localities to its advent, geological as well as atmospheric conditions must be taken into account. In the endeavors to prove "that malignant cholera is infectious," and that simple diluents are amongst the most important accessories of the treatment, we conceive that Mr. Sadler is less happy. He remarks—

"It is evident that in cholera the blood must lose a great part of its serous element; and pathological facts show, in examining the body after death, that the blood is 'of an oily or ropy consistence, very closely resembling tar or treacle;' this being the case, it requires but a very superficial knowledge of anatomy to convince any one, that blood approaching to this state cannot possibly circulate through the fine capillary vessels of the system, and if it does not circulate through these, the blood cannot undergo its proper changes in the lungs; all secretions must be suspended, and death the result."

But it is equally evident that "simple diluents, as water," will not replace the "serous element" of the blood, even if the stomach can be got to receive and retain them. The advocates of the saline treatment, applied to the system by the various modes which have been adopted, will argue, and with some reason, that the fluids they aim to introduce into the system, contain more of the constituents of the wanting serum than pure water, and are therefore more analogous to the materials demanded to replace the loss suffered by the circulating fluids. Mr. Sadler is quite right in adding, immediately after the passage last quoted, "Diluents may not save the patient in such a state of the blood."

Mr. Greenhow, Newcastle:—

Observes, "One fact connected with the history of cholera is most important to be kept constantly in mind—cholera is not a contagious disease. It is incapable of being communicated from one human being to another, neither can it be communicated from the dead to the living. Ample opportunities of careful observation and investigation in 1831 and 32, convinced us of this great truth—truly great, as regards our conduct in reference to another visitation of this formidable disease. . . . . . The danger is not from the persons of the sick, but from the localities in which they have been seized with the disease, the efficient cause of which, for the most part, settles down into hollows, the beds and margins of streams, and dirty recesses, into which a pure and wholesome atmosphere can scarcely at any time find its way. . . . . Such places, in a philosophical point of view, have a near resemblance to the celebrated *Cave of Dogs* in Italy, so fatal to the canine race, while *man* enters unharmed—simply, because his superior stature enables him to breathe an atmosphere untainted by the deadly vapour which, lurking in the lower part of the cave, is sure to kill his dog. As in this instance, so in the endemic cholera, there is a certain line of altitude, beneath which disease will certainly take place, in degrees proportioned to the predisposition or susceptibility of the inhabitants, which, in its turn, is dependent upon conditions already referred to; above this line, on the contrary, disease will either be entirely absent, or its occurrence extremely rare. . . . . . Experience has proved that this noxious condition of the air cannot be purified by any artificial or chemical means that have been devised; and it is only by removing to a more healthy situation, on a higher level than the endemic line already referred to, that the inhabitants can be saved from disease and death. The manner of effecting this migration, or the removal *en masse*, of the inhabitants of a locality so contaminated, whether by preparing beforehand temporary houses in an airy situation, beyond the boundaries of the town, or by pitching tents in such a situation, on the spur of the necessity, must be determined by committees of health and town councils, or other authorized bodies. . . . . Whatever might be the cost, it would doubtless be greatly exceeded by that of providing for many sick persons, and for the burial of not a few of the dead. It may safely be laid down as a good practical rule, that the prevention of a great calamity is less costly than the loss sustained by its actual occurrence."

Dr. M'Cann :—

[Dr. M'C.'s treatment, which is highly lauded by Mr. Hodgson, of Birmingham, is the following:]

"*For Prevention.*—I recommend comfortable and nutritious animal food of the solid kind, warm clothing, and attention to regular hours, free ventilation, and cleanliness; also, lime-washing the dwellings of the poor. I advise abstinence from spirituous liquors, from all fruit and raw vegetables, from all salt fish and oysters—the latter especially—from all excesses that debilitate the constitution; and, above all things, I deprecate the strong purgative medicines. When sickness, with derangement of the bowels is felt, the patient (if an adult) should mix a tablespoonful of mustard, or double that quantity of common salt, in half a pint of warm water, a third part of either to be taken every ten minutes until free vomiting be produced; after the stomach has been well cleared out with more warm water, thirty drops of tincture of opium should be given in a glass of brandy-and-water, to be followed up with a pill composed of five grains of calomel and two grains of opium; for an adult, small doses of these in the proportion of three grains of calomel and half a grain of opium to be taken at intervals of every two hours until bile is observed to pass in the evacuation."

Embrocations of heated turpentine, hot water in bottles or jars, bandages tightly placed around the seat of pain, and "from two to five drops of chloroform, in a little ginger tea or any warm fluid, as one of the most efficient agents in removing choleric spasm," are the other principal remedial means on which Dr. M'Cann places trust; and his treatment in the stage of collapse "is as nearly allied as possible to that of the early stage."—

Carlow Sentinel, Sept. 23*rd.* *Lancet, Oct.* 21, 1848, *p.* 451.

Dr. Merryweather, Whitby:—

[The following case seems to prove pretty strongly the contagious nature of the disease:]

In 1432, I was called upon to visit a man of the name of Stonehouse, in Bake-house yard, of this borough, who had just been landed from a ship. I found it a decided case of foreign cholera, in a state of collapse, as cold as ice, and of a leaden hue. This was the first case in this town, and *imported*. I remember well telling Stonehouse's wife to be cautious, and not be too much about her husband, as it was not yet decided about contagion. The result was, that the wife took it and died the first. Here we have an isolated case imported into a town that was free from cholera, and the very wife who was the nurse fell the first victim.

In 1833, this town was fearfully visited by Asiatic cholera, but owing to the valuable precautionary measures that were adopted at that time, and from the noble manner in which the rich came forward in aid of the poor, this scourge was wonderfully mitigated. My experience leads me to say that if every one would apply for medical aid immediately the premonitory symptoms of bowel complaint comes on, there is nothing more easy to check. If the Board of Health were to placard all the towns and villages in Great Britain, cautioning and intimating to all the inhabitants, that the choleraic bowel complaint was equivalent to bleeding to death, applications would be made at once for medical relief, instead of medical men being applied to too late, when they too often are called upon to visit, and witness all the phenomena arising from the exudation of serum from the stomach and bowels, consequently arresting all other secretions: hence the frightful shock to the nervous system and vital powers.

Medical Gazette, *Nov.* 10, 1848, *p.* 812.

Dr. W. Reid:—

The affection commonly named the Rose, or St. Anthony's fire (the erysipelas of systematic writers), has from time immemorial been classed among the *non-contagious* order or group of diseases; in short, it has generally been considered as *not* infectious. *Three*, however authentic, uncontested, and indisputable illustrations of the contrary have been noticed within the last thirty or forty years, respectively in Montrose, Edinburgh, and the metropolis. Some twenty or thirty were affected in all, and if we recollect aright, some of these cases terminated fatally. But that does not in the least affect the question of infection.

The corrollary or inference, then, is self-evident; for here is a disease, usually in its most ordinary form (and, as every person knows, it is a most prevalent affection) held as *not* contagious, propagated by contagion, distinctly through a series of three different groups of individuals originating in *one* of each of these groups, in whom the orignal cause was altogether a matter of pure accident. What holds good, then, in this affection, may, until the contrary is demonstrated, hold no less forcibly in any other new disease, not generally deemed to be infectious. The production, apparently, of a disease by contagion, does not preclude its origin from causes independent of any animal effluvia, and the generation of a disease from natural physical causes, would not appear to prevent the possibility of that affection subsequently acquiring infectious properties So that if we are brought in collision with a disease of such a *double* nature (if this expression be permitted), we shall have at once to fortify ourselves against the agency of the physical causes, and avoid, at the same time, free intercourse with the infected, if we desire to live secure from the disease. No one denies now the occasional production of erysipelas by infection.

The evidence of the production of cholera in a similar mode is fully as strong: still, the cholera may be, and in all probability is very much under the influence of atmospheric and terrestrial agencies; but so, likewise, is common continued fever. The cholera is not always infectious; but the *fact that it is so at times*, upholds the necessity of always being on our guard against that contingency occurring.

We consider that the proposition, also, may be held as established, that the identity of a disease, and its propagation by infection, are not to be imputed as absolutely essential in every instance; or, in other terms, it will be admitted, we conceive, that a disease may at times proceed distinctly and undoubtedly from infection; while under other circumstances, causes altogether of a different character may contribute to its generation. In the case of common continued fever, this seems to be undoubtedly the actual statement of the proposition. And precisely so do we conceive the evidence holds as regards the cholera.

It may not be contagious in one locality, while, in another, it displays that property in an exquisite degree. In the large and spacious dwellings of the rich and affluent, it may never assume that mark (analogous to typhus under these conditions;) while in humbler and more crowded abodes of the dwellings of the poor, infection may be its most distinctive mark. It may, likewise, (to pursue the parallel) never attack, at least but rarely, the wealthy (analogous again to typhus fever, which rarely affects that class of society;) while the poor, impoverished, over-wrought, ill-fed, depressed artizan, becomes its ready prey, as is sufficiently notorious in the case of our common fever. It may have one character in the tropics, and display another within the temperate circles, yet continue still the same affection. It not being contagious in one district, is no guarantee that it will not become so in another; for in the first many concurring causes might not exist, which may be met with in the latter.

From the data now enumerated, we think we do not rush precipitately to a conclusion when we assert that we have no positive evidence that cholera is *invariably* a non contagious disorder; and also that, on the other hand, we have most satisfactory and indisputable grounds for saying that it has almost, in its first visitation of this country, uniformly affected the very same localities and tracts which are the unvarying haunts of typhus.

[Dr. Reid, therefore, concludes that as we cannot tell precisely under what limitations, to say the least of it, cholera is non-contagious, the most safe and judicious plan is to adopt precautionary measures. They can do no harm, and may be the source of much good.]

Medical Gazette, Oct. 13, 1848, p. [illegible]

J. G. French, Esq. :—

In 1832, I had the charge of St. James's Cholera Hospital. A matron was engaged,—selected, among other qualifications, for the vigor of her constitution, and temperate habits. She was forty years of age. Her duties were those of housekeeper, not of attendant on the sick. She had resided in the hospital for some weeks previously to the admission of any cases. The first case which was admitted was mary Lee (aged thirty) on the 6th July. The journal of the hospital states that she had been nursing her mother, who had died the day previously of cholera, and was seized in the churchyard at her funeral. This patient died seventeen hours after admission, and was not seen by the matron.

The second case was Margaret Lidgate, aged nine, admitted on the [illegible] July, from the Burlington School, at 1 P.M. The matron immediately visited this child, sat with her, and rubbed her legs while she was in a state of collapse. About half-past five o'clock the matron (previously in excellent health) was attacked with cholera, and died in thirteen hours and a half.

I believe that the communication which the matron had with this patient was the real cause of her attack.

John Foy, a laboring man, was attacked while at work at Paddington, at two P.M. in August, 1833. Some of his comrades had become affected in this locality, and died. He was brought home to Ham Yard, Windmill-st. His wife was attacked after nursing him two days, and subsequently three cases occurred on the floor above that on which he resided. This is precisely the same kind of evidence as that on which the contagious nature of typhus rests.

Although these cases afford ample evidence, to my mind, of their contagious origin, I am by no means disposed to doubt that other and more numerous cases might claim their origin from other causes.

It may, however, here be remarked, with reference to the general question of prevention as contemplated by quarantine regulations, that it is highly doubtful whether any known or practised system of quarantine would prevent the introduction of a disease so universally admitted to be exclusively contagious as syphilis, should a new form of that disease, for the sake of argument, be the object of its laws.

The ideas, indeed, commonly attached to contagion are so exaggerated, that when diseases, supposed to be of this nature, are observed under ordinary circumstances, the evidence is so weak and doubtful, that men of considerable experience are led to form the strongest opinions that these diseases are incommunicable from one individual to another. Thus, the facts elicited by a careful inquiry into the history of the Eclair, were in direct opposition to the numerous opinions formed by men who had observed the disease, which was the object of inquiry, at different times and places. So, although Dr. Armstrong denied the contagion of typhus, the Commissioners of Health in a recent circular, declare it to be a "*highly* contagious disease.

The degree in which diseases are contagious is a question, indeed, of very great difficulty; but it is certain that the principal circumstances connected with it are, the denseness of the population, and the number of cases of the same disease crowded together, although it is a part of the history of disease that occasional outbreaks of unusual virulence will occur which defy all calculation.

The chief practical question, indeed, is, if diseases are deemed contagious, how they are to be disposed of.

It has been my practice for many years to separate, as widely as possible, cases of the same disease which are deemed contagious, and, I believe, with an undoubtedly good result. So, if there are more cases than one of erysipelas, or other contagious disease, I place them in different wards; and I am satisfied from experience, that there is less danger of infection from increasing, as it were, a malarious area, than from the more concentrated taint occupying a smaller space; and also that the cases themselves proceed more favourably. *Medical Gazette*, *Oct.* 20, 1848, *p.* 676.

J. C. Atkinson, Esq.:—

I am desirous at the present moment of directing the attention of your numerous scientific readers to a very interesting phenomenon, more or less present in the collapse stage of cholera, which seems to have hitherto escaped the observation of medical men—viz., animal electricity, or phosporescence of the human body. My attention was first attracted to the subject during the former visitation of that fearful disease in the metropolis. It was indeed singular to notice the quantity of electric fluid which continually discharged itself on the approach of any conducting body to the surface of the skin of a patient laboring under the collapse stage, more particularly if the patient had been previously enveloped in blankets; *streams of electricity*, many averaging *one inch and a half* in length, could be readily educted by the knuckle of the hand when directed to any part of the body, and these appeared, in colour, effect, crackling noise, and luminous character, similar to that which we are all accustomed to observe when touching a charged Leyden jar. I may remark the coincidence, that simultaneously with the heat of the body passing off, the electricity was evolved; and I am therefore led to ask the question—Are not heat, electric and galvanic fluids *one* and the same thing? Does not the fact of the passing off of both imponderable substances at one and the same time strengthen this conclusion?

Again: are not the whole of what we call *vital* phenomena produced by certain modifications of the electric-galvanic-magnetic matter and motions?

and do we not find that these *vital* phenomena are continuously affected by the relative state of the surrounding electric medium? To what can we attribute the present fluctuating condition of the barometer, if not to it?

We *know* what wonderful *decomposing* action galvanism had on alkalies, under the hands of the illustrious Humphrey Davy; but we do *not know*, nor have we any conception in the present state of knowledge, of the *decomposing* action of the electric matter of the atmospheric air, in various conditions, on the fluids generally of the animal body. Chemistry has failed in pointing out any ponderable material as the exciting cause of epidemic diseases.

In the treatment of cholera all are agreed that *non-conducting* substances on the surface of the skin aid essentialy the cure; and during the disturbed state of the atmosphere, for the purpose of retaining the electricity continually eliminating in the system, we are told to wear woollen bandages, flannel, and gutta percha soles, so as to insulate as much as possible the body, to prevent the heat—the electric fluid—from passing off.

Lancet, Nov. 8, 1848, *p.* 504.

Sir James Murray :—

Says " From the theory of cholera published in the London *Medical and Surgical Journal* 1832, and since amply confirmed in many parts of the world, it is to be concluded that the judicious use of long continued *galvanic passes* through the *respiratory* and *spinal nerves* is one of the most essential adjuvants that can be employed during collapse, or in that state of passive galvanic abstraction which *ought to be treated like suspended animation.*" *Lancet, Nov.* 4, 1848, *p.* 501.

Dr. Joseph Ayre, of Hull :—

[Recommends the use of calomel in cholera, having tried it largely and with great success in the epidemic of 1831–2. He says:]

Calomel in one or two grain doses, taken with one or two drops of laudanum, and repeated every five or ten minutes, for several successive hours, with an occasional omission of the laudanum at intervals, formed my exclusive remedy for the blue or collapsed stage in all the cases I attended. I scarcely used a single auxiliary means of any kind. I neither bled, nor gave stimulants, nor emetics, nor used the air-baths, nor frictions, except to relieve the cramps, nor did I resort to any but the ordinary means for supporting the temperature or strength of the system. I gave only calomel, and in the dose and manner described, and placed no other limit to the use of it than that which was placed by the disease. So long as the disease in the collapsed stage continued, the medicine was continued; for pending the duration of that stage, I desire emphatically to aver, no absorption of the calomel takes place, and no ptyalism can occur; and when that stage was yielding to the remedy, I took the needful care to suspend the use of it. Of the patients whom I lost, the greater number died in the stage of collapse, and from within twelve to twenty-four hours from my first seeing them; and nearly all, if not all, from causes which were superadded to the disease, and which, in most instances, might have been obviated by a more exact attention of the friends and attendants to their duty.

Few, therefore, died in the consecutive fever, and of those who recovered, not one in ten had any fever at all; for it is one of the essential and distinguished properties of this treatment, to prevent the occurrence of the consecutive fever, by its direct power to restore the secretion of the liver, which is alone required to put an end to the disease. I have already stated, that notwithstanding the very large quantities of calomel that are often needed, and taken in single grain doses, ere the collapse is subdued, no ptyalism or other inconvenient effect is ordinarily produced by it. Not one in twenty of my patients had any ptyalism at all; nor in the very few who had it did it last much more than a week, and not in any of them was there a vestige of it at the end of a fortnight. Indeed, after taking some pains to call to my recollection the number of such patients, I can only count up seven who could be said to make any complaint of it, and with those whose lives had been saved by it, it passed away entirely in ten or twelve days, and without producing, or leaving behind it, even the shadow of a shade of those effects which some might imagine to be inevitable, and in its anticipation bewail with profitless lamentation. In the way already described, I gave it alike to infants, though in a smaller dose, and to the aged, and in one instance, to a considerable extent to a woman ninety-two years of age, whom I found in the collapse stage, and nearly pulseless, who in a few days was wholly recovered, and who survived the attack no less than eleven years, having reached the advanced age of one hundred and three, and with a power to take out-door exercise up to a period very near her death.

In some cases it was taken in quantities the most considerable, and which nothing but the imminency of the danger from the disease, and the experience of the harmlessness could justify. By one man, Vaughan, a tramp, who was admitted into the hospital in the stage of collapse in its most malignant form, and who emerged from it slowly at the end of three days, the immense quantity of five hundred and eighty grains of calomel was taken, and who, notwithstanding, without either fever or ptyalism following, was perfectly well, and ready to leave us in a week.

Lancet, *Oct* 28, 1848, *p*. 472.

Dr. C. Patterson:—

[No remedy except calomel, Dr. P. thinks, can be relied on in cholera, when once the stools have assumed the rice-water character; the only difficulty is that its action is not immediate; and some remedy is therefore needed to delay the progress of the complaint until the calomel becomes absorbed. Such a one Dr. Patterson thinks he has met with. He says:]

Among the various remedies hastily tried and as hastily abandoned, during the prevalence of cholera in 1831 and 1832, were stimulant and astringent enemata. One of these was composed of sulphate of copper, sulphate of zinc, and alum: one scruple of each dissolved in two ounces of cold water. It is evident that this was not employed with any successful effect; for it was scarcely suggested, when it fell into disuse, and was forgotten, no mention of it having ever been made by any of the numerous writers who since have written on cholera. I was led to employ it late in the epidemic, which abated before I had time for sufficient experience: but what I saw left a deep impression on my mind, that it possessed considerable, though temporary, power in immediately restraining the alvine discharges, and was just the adjutor that was wanted to render the calomel treatment effectual.

[Accordingly in the second epidemic which attacked Rathkeale in 1833, this plan was tried, and the mortality *post hoc*, whether *propter hoc* or not, was very low. Dr. Patterson tells us:]

From the very onset, and in the first case that presented itself, that treatment consisted in the carrying out of the views I have already stated. I combined the employment of calomel, for the purpose of expelling the poison from the system, with the administration of the compound sulphate injection above described, for the purpose of restraining the discharges until the calomel should have time to act; and I proceeded thus—When a patient, passing dejections resembling rice-water, presented himself, I at once placed on his tongue five grains of calomel, and gave thirty drops of tincture of opium; and then, without a moment's delay, a nurse-tender who accompanied me, threw a wineglassful of the compound sulphate enema solution into the rectum: generally the injection was immediately returned with a large discharge of watery liquid, the contents of the rectum. The nurse, then being instructed, without a moment's delay, threw up a second similar injection, which was, in most cases, retained by an effort of the patient's for a few minutes, and then came away, accompanied by a few ounces of the watery discharge. The nurse, then, instantly again repeated the injection, which, being within a few minutes returned without any addition, she ceased to throw up any more.

At my next visit, I was in most cases met with the complaint that the patient was extremely bad—"worse and worse," "going (or rather running) to the vessel every minute:" but on further inquiry, this running to the vessel always turned out to be nothing more than a troublesome tenesmus. The watery discharge was completely arrested, and the patient was not passing a particle of even liquid fæculent matter. He was told that this state was what was desired, and was encouraged to bear with it.

The tenesmus generally continued for a few hours, and then gradually abated, and in the great majority of cases there was no return of the watery discharge; while at the end of every four hours five grains of calomel were regularly placed on the tongue, until after three or four, or perhaps six or eight, such doses, the patient had a semi-consistent, dark green, or black biliary motion, followed by others of similar nature. These stools presenting no curdy appearance, as of a watery liquid separating from a thicker biliary matter, left no doubt that the cholera state was at an end. The calomel was then discontinued, whether the gums had become sore or not, thence forward, under the usual management, every such case in this visitation of the epidemic did well.

Most frequently no attention was paid to the tenesmus to abate it; for, as I have said, it was regarded as a favourable state; but sometimes the suffering of the patient from that cause would be very distressing. Then, after a reasonable delay, that it might not be abated too soon, a starch enema with laudanum was administered, and always produced relief. In some cases, the tenesmus and arrest of the watery discharge immediately followed the first injection, and no second was required. It often happened that after two, or three, or more hours, the tenesmus would go off, and there would then be a watery motion, when immediately a compound sulphate injection would be again thrown up, and from time to time repeated instantly, as often as there was any return of the watery character; but this repetition was hardly ever required more than three or four times.

It sometimes occurred that the compound sulphate injection produced no tenesmus, and yet was followed by complete arrest of the cholera discharge and there were instances in which the injection, even the first, was retained in the rectum. In these latter cases, after waiting from half an hour to an hour, I caused, lest any harm should arise from absorption of the copper, a large enema of warm water to be given. This always cleared out the bowel, and the case went on well.

There is an affection which was sometimes met in both cholera years, and which I believe has been generally regarded as fatal in its result. This is a discharge of pure blood, or bloody watery liquid, from the rectum, but it may be easily and effectually restrained by injections of solution of alum. Each injection should consist of three drachms of alum dissolved in half a pint of cold water. As fast as one injection comes away, while there is any appearance of blood, another must instantaneously be given. The nurse should be supplied with two or three pints of the solution, and the necessity impressed upon her of carefully watching the patient, and instantly administering an injection as soon and as often as it may be required. When the sanguineous discharge is thus suppressed it seldom returns; but if it should, recourse must again be had to the alum injections. I have never known them to fail in stopping the discharge, and when given in time, saving the patient.

In the bilious or fæculent diarrhœa, which so frequently occurs as a precursor and concomitant of cholera, I have not employed the compound sulphate injection. In these cases I have been content with using the remedies usually recommended, but the moment the stools assumed the rice-water character, I at once had recourse to the injection.

In employing this injection, it will not do to direct it to be given at pescribed intervals. It must be fearlessly and steadily repeated instantly after every motion exhibiting the watery character, no matter how numerous or frequent may be the calls for it. It is on this its success depends, and if there be neglect of observing this, nothing but failure of this powerful remedy in the hands of those who may so negligently employ it is to be expected.

In visiting the patients at their houses during the second epidemic, I had the assistance of Mr. O'Hanlon, a respectable apothecary of this town, who was very conversant with cholera, and who always accompanied me and witnessed the result of the treatment. It should always be an injunction to the patient to retain the injection for a few minutes if possible. When given to children, it was always diluted with an equal proportion of water.

Dublin Medical Press, Sept. 20, 1848, *p.* 177.

G. J. Guthrie, Esq.:—

[A remedy supposed to be specific, has been employed for cholera, in the Russian army in the Caucasus. The authenticity of the documents from which the account of this plan of treatment is derived, is vouched for by Mr. Guthrie. This gentleman, in bringing the subject before the Medico-Botanical Society, said :]

This remedy was a singular one: it was naptha, exhibited in small doses of from ten to twenty drops; the dose being repeated if required, which was rarely the case. The naptha that was used was not the ordinary naptha of the shops, nor that recommended in the treatment of rheumatism and consumption; nor the petroleum or Barbadoes tar, but a pure white or rose-coloured naptha, which is employed without being subjected to distillation. It is in all probability the mineral naptha which is obtained from Beku, on the borders of the Caspian. In order, however, to determine precisely the characters and properties of this mineral, he (Mr. Guthrie) had sent to Circassia to procure a bottle of it, and as soon as it arrived it should be placed in the hands of their secretary.

Mr. Guthrie then read extracts from letters from Dr. Andreyeoski and Prince Woronzow, the Russian Commander-in-Chief in Circassia.

Dr. Andreyeoski says, "naptha or petroleum, not distilled—and the white is to be preferred,—is an infallible remedy against the diarrhœa cholerica, which prevails during certain seasons, in the dose of from four to eight drops, in a little brandy, white-wine, or mint-tea, taken cold; a single dose usually suffices to arrest the complaint. The evacuations, which, in this species of diarrhœa, are always liquid and glairy, become more solid and less frequent. Sometimes the dose requires repetition at the end of two or three days. The diet should not be too strictly, although carefully regulated.

In completely developed cholera of a deadly nature, the cures are not so constant, and from fifteen to twenty drops of the naptha are to be given for a dose. If they are vomited up, the dose should be repeated: a second is rarely required if the first be retained. It acts evidently on the skin, and on the kidneys, and removes the cramps."

In the first letter from Prince Woronzow, dated Tiflis, March 1, 1848, it is stated that "it is indisputable that most cholera cases begin with diarrhœa, and consequently it is most important to act immediately and energetically against the first symptoms; the experience of the last year has proved without a doubt that naptha is the best and easiest remedy in diarrhœa, whether it be nothing but diarrhœa, or the first symptoms of ensuing cholera. Dr. Andreyeoski thinks that the diarrhœa which precedes cholera is always without pain; and it is then that naptha should immediately be resorted to; but in diarrhœa, with pain in the bowels, he always employs opium. He first met the cholera last year at Tamikhan, where it prevailed to a very serious degree; the hospital I visited contained the first day more than 200 patients; the cases generally were very bad, and the mortality great. On inquiring of the colonel commanding the Cossacks, why there were so few Cossacks among the sick, he told us that he made light of cholera, because they employed the elixir of Woreseje, which proved successful in every case. Andreyeoski immediately procured the recipe for the elixir, and on the first appearance of cholera in the convoy which accompanied me to the camp, he tried drops of that elixir, with constant success. On examining that prescription, he found it to be a singular mixture of different matters, looking very like a quack medicine, but containing among other strange, and, as he thought, useless substances, some specific acting favourably in cholera; and he told me that naptha, one of the principal ingredients, might possibly be that specific. The stock of elixir being soon exhausted, Dr. Andreyeoski determined to try naptha alone, and, as he expected, it succeeded even in severe cases, but in mere diarrhœa the success was immediate. He has, however, always resorted to the elixir, in cases to which he was apparently called too late—in the blue stage, accompanied by cramps, &c.; but even in many of these advanced cases naptha alone, has proved successful. I have seen several of our officers quite blue, and in extreme suffering, who were cured by it. As to simple diarrhœa, during the existence of cholera, I do not know a single case which the naptha failed to cure, when resorted to immediately." One of the Circassian chiefs was suddenly seized with cholera; before Dr. Andreyeoski could see him, he had been bled, and was in the last stage of the disease; he was ordered some rum, and had two doses of the elixir, which, with friction and warm clothing, restored him to life and health, but the convalescence was tedious. The naptha must be genuine white or rose-coloured, not black nor brown, nor distilled, as that would be much too powerful.

Extract from a letter from Prince Woronzow, April 20, 1848. "In sending you the promised prescription for Dr. Andreyeoski's elixir, I must add that he recommends frictions of every part of the body during a real attack of cholera, besides the use of the elixir, and warm baths also to alleviate the cramps. It must be remembered that in almost all cases the real symptoms of cholera are preceded by diarrhœa without pain, to check which the naptha drops have been without comparison the most successful remedy. If cholera appear abruptly, Dr. A. advises the immediate use of the elixir; if this be not within reach, then resort to the naptha drops, as well as the warm baths, and especially to vigorous friction, to restore the circulation. Dr. A. deprecates all bleeding and mercurial medicines: if diarrhœa with pain occur, even in cholera times, Dr. A. treats it simply with opium, not considering it premonitory of cholera."

The following is the formula for the elixir of Woroneje:—Sp. vini rect. lbviiss.; sal. ammoniac. ʒj; nitri depurati, ʒj, gr. xv.; piperis, ʒj. gr. xv.; aquæ regæ, ʒss.; acet. vini. lbiss.; petrolei (napthæ), ʒss.; ol. olivæ, ℥ss.; ol. menth. pip. ℥vij.—Digere per horas xii. et cola; capiat coch. ij., parv. pro dosi omni quarta parte horæ. *Medical Gazette, June 23, 1848, p. 1089.*

J. C. ATKINSON, Esq.:—

[The cases in which this remedy is applicable, are stated by Mr. Atkinson to be those in which great flatulence and unpleasant eructations occur. He says,]

The material is named napthaline (and seems an essential constituent of naptha); it can be procured from Mr. Hooper, of Pall Mall East, and doubtless elsewhere. It is pronounced the purest hydro-carbon, and most readily absorbs gaseous products, and putrescent materials of the intestines, relieving almost instantly the tympanitic condition of the bowels, so often present in that disease. This crystalline substance may be given in pills, in one or two grain doses, with opium, or aromatic confection; the latter, for the purpose of removing in part the unpleasant odour which seems peculiar to it.

I offer this remedy for trial, more particularly at the present moment, as carbon has been strongly recommended by Dr. Parkin; and as this is the purest hydro-carbon that we have, and again, because naptha (not the med-

icinal naptha, which after all appears to be only acetone), has received some reputation for the cure of that formidable disease on the borders of the Caspian Sea. *Lancet, Aug.* 19, 1848, *p.* 220.

Dr. J. TUNSTALL, Bath:—

[In reference to the use of petroleum, Dr. Tunstall, of Bath, states that in September, 1846, he wrote a letter to Sir C. Napier, which was extentensively circulated in the East by Sir Charles's direction, and from which the following is an extract:]

The petroleum is a natural product found in many parts of the East Indies, in Persia, and in the island of Barbadoes, in various states of purity. A drachm contains fifty-two grains of pure carbon, with eight of hydrogen; whilst an equal quantity of any other substance, which could be safely administered, contains but five grains of that elementary body.

Pure petroleum is the only known substance which contains carbon and hydrogen, without the admixture of any other elementary principle, which is not the case with the other bituminous products; its peculiar efficacy depends on this binary combination, its curative powers resulting from the chemical union with those principles on which the morbid action depends, by its elements entering into new arrangements with the elementary gases eliminated by disease.

It is a mild though effective stimulant, antispasmodic and antiseptic, acting in the same manner on the absorbent vessels as mercury, without its deleterious effects; it speedily permeates the whole system, so that its odour is perceptible in all the animal excretions. Asiatic cholera is a disease requiring (as I can testify from my own experience in London and Edinburgh), the most active diffusible stimulants to support the flagging energies of life; it is also a disease attended with an alteration and decomposition of the vital fluids. The observations of the celebrated Dr. John Davy, and of other eminent practitioners, have demonstrated that the respired air of cholera patients contains a much smaller proportion of carbon, (that element which is discharged from the system during healthy expiration,) than is sufficient for the proper purification of the blood.

Now, in the petroleum, we have a medicine that acts primarily as a powerful stimulant, secondarily by supplying the system with its due proportion of carbon for excretion; while its effects being produced by means of the absorbent system, it acts beneficially as an antiseptic, preserving the frame from the rapidly fatal effects of this horrible disease, by evolving carbonic acid from the lungs.

I have seen the petroleum used extensively, both locally and generally, and have never observed the slightest deleterious effects arise from its exhibition, even in comparatively large doses. I am induced to believe, from actual observation, that it is a most valuable diffusible stimulant, and that were it freely employed in the Asiatic cholera, it would produce marked beneficial effects. To you, then, Sir, I would address those observations, which would more properly be addressed to the medical officers under your command; hoping that by your kind recommendation, they may be induced to give this medicine a fair trial. The petroleum used in England is the petroleum (*Barbadense*), which contains, according to Dr. Ure and Professor Farraday's analyses, in 100 parts, 85·5 of carbon, and 14·5 of hydrogen, and by the latter it is called hydro-carbon.

It is important to guard against the employment of petroleum or natural naptha, containing any other elementary body than the two before mentioned. To prevent any error in this respect, perhaps it is necessary to state that the petroleum (*Barbadense*) employed by practitioners in England, is a pure hydro-carbon; it will, therefore, be necessary carefully to analyse the native East India naptha before it can be safely administered.

The form of exhibition I would recommend is the following:—Take the yolk of one egg, and amalgamate with it a tablespoonfull of the petroleum, and to it add forty drops of the aromatic spirits of ammonia, filling a wineglass with equal quantities of brandy and water; and this dose may be repeated according to the emergency of the case.

Prov. Med. and Surg. Jour., July 12, 1848, p. 390.

Mr. John Moore, of Bourton, Gloucestershire:—

[Recommends the use of turpentine on the following grounds:]

The most formidable symptom of cholera—that which most rapidly tends to produce fatal prostration—is the escape of the serum and saline particles of the blood from the internal surface of the intestines. Over this symptom turpentine exercises a manifestly powerful influence. Like another correspondent of the Lancet, (August 26th last,) I was led to administer turpentine internally in cholera, by witnessing the salutary effects resulting from its external application, which by far exceeded what could be fairly attributed to counter-irritation; but though I have as yet prescribed it empirically, reason and analogy are not wanting to account for its efficacy.

Without speculating upon their nature and position, (which would be foreign to my purpose,) I apprehend that there can be no doubt that orifices naturally exist upon the internal surface of the intestines, through which serous exudation takes place. Internal hemorrhage may occur where no suspicion of organic lesion exists. In cholera, the albuminous and saline particles of the blood pass away copiously by the bowels, and no abrasion of their surface has been discovered upon post mortem examination. It is a fair assumption, therefore, that by the same orifices which in their normal state instil serum into the intestinal canal, for the purpose of its lubrication, grosser particles of the blood may pass when the said orifices are relaxed by the depressing agency of the choleraic or other poisons. Then, as turpentine exercises over passive hemorrhages an influence almost specific, analogical reasoning might lead us to anticipate its tending to mitigate or arrest that exhausting effusion by the bowels of the nutrient portions of the blood which occurs in cholera.

Lancet, Oct. 28, 1848, p. 478.

Dr. C. Radclyffe Hall:—

[The treatment by tartar emetic which originated in Italy, was noticed in the Medico-Chirurgical Review, and came under the notice of Mr. Stott, of Manchester, by whom, and by others at his suggestion, it was extensively used in 1832. Dr. Hall, who observed Mr. Stott's practice, states that it was very efficacious. He says:]

The ordinary mode of proceeding was as follows:—Five grains of tartarized antimony were dissolved in half a pint of camphor mixture, of this an ounce was given every two hours. The patient was urged to drink freely of toast-water. Immediately, or in a short time after the first dose, vomiting occurred, and was encouraged by the toast-water. After a time, the patient usually objected to the copious drinking of the water, and required much urging to persevere. Perseverance, however, was strongly enjoined. It was noticed in nearly all the fatal cases, that the objection to continued drinking had not been overcome. This plan was unceasingly persevered with, presenting a scene of incessant drinking and throwing up, until the stomach became tolerant of both the antimony and the fluid. The mixture was then continued, with less drinking of toast-water, so long as the symptoms required it. Simultaneously with, or shortly after the cessation of, vomiting, the symptoms usually improved. The good signs were these—warmth of tongue; gentle warm perspiration, and secretion of urine; increased volume of pulse, subsidence of cramps and of diarrhœa, and less of the extreme dejection of mind: sometimes, a little bile in the matter vomited, or a bilious stool. The antimony was now discontinued, the patient allowed to remain quiet, warmth applied to the feet, and a little arrow-root gruel given, flavoured or not with brandy, according to circumstances. The patient generally fell into a quiet sleep, and awoke feeble, but feeling comparatively well and in good spirits. The action of the bowels was next attended to by giving castor oil, and very little other than hygienic treatment was needed subsequently. When the cramps attacked the abdomen, sinapisms were applied until the effect of the antimony had had time to remove them.

The advantages of this treatment were found to be 1, its superior efficacy as a means of cure; 2, its speedier operation in curing; 3, the absence of the fever of reaction, with its accompanying risk of pneumonia and other serious lesions—a result not ordinarily attending any of the other methods of treatment.

The *rationale* of this treatment—homœopathic in theory, heroic in practice—is easily deduced from the known pathology of cholera. All we know of the facts of cholera is summed up in a few words. After exposure to the influence, the subject sickens, there is extreme prostration of mind and body, shock of all parts of the system, a check to all natural secretion, inability on the part of the vascular organs to circulate the blood properly, want of blood on the surface, superabundance of blood in the viscera, a gorged state of the internal veins, effusion of the serous part of the blood through the gastro-intestinal mucous membrane, and, consequently, serous vomiting and purging, deficient animal heat, and cramps. What, then, are the indications?

1. To restore the circulation by dislodging the gorged internal vessels of their contents, by sending blood to the surface, and so to gain time.

2. To follow Nature's indication of ejecting the *materies morbi*, without allowing death to ensue in the meantime; or otherwise to follow, *to a safe extent*, Nature's own plan of action, until the morbid agency ceases to exercise its deleterious influence.

3. To restore fluid to the drained and inspissated blood.

4. To restore secretion.

Theoretically, we might have doubted the safety of exhibiting a prostrating remedy like tartar emetic in a disease attended with prostration, like cholera. On such a principle we should not bleed in peritonitis. But the prostration of cholera is kept up by the almost stagnant circulation in the capillaries, and the engorgement of the veins, conditions which antimony, when absorbed, has a tendency to obviate, and which, as an emetic, both mechanically and through the ganglionic nerves, it tends to overcome. The distinction between spotaneous vomiting and vomiting artificially induced must be borne in mind. The former exhausts far more rapidly and seriously than the latter. Tartar emetic never kills by vomiting. However, the discussion of the principle of administration is of very secondary importance to the practice, and it is on practical, and not on theoretical grounds, that I suggest a trial of the plan, should the expected opportunity occur.

It is well to bear in mind the points we *do not know* in the pathology of Algide cholera.

1. The nature of the morbid poison, whether electric, animalcular, malarial, or animal.

2. The laws of its transmission, whether as an epidemic only, or as an epidemic and infectious disease also.

3. The laws of its operation, whether imbibed into the blood through the respiratory and vascular mucous tract generally, or through the skin, or whether it act in some indescribable manner on the nervous system without necessarily being received into the blood at all. Assuming its reception into the circulation in the first instance—whether it merely mixes with the blood and suspends secretion and muscular power by its own action on secreting cells and muscular fibre, and nervous power by a similar action on nerve-cells; or affects secreting and muscular tissues only through the medium and intervention of the nervous system to which its direct influence, whilst circulating in the capillaries, is restricted; whether it changes the quality of the blood like the typhoid poison prior to acting on the solids at all, or whether it performs all these actions at one and the same time.

Whether the blood or the nervous centres take the lead in causing the phenomena,—whether the vitiated blood stops secretion, disorders the nerves, and irritates the muscles, or the checked secretion causes the accumulation of vitiating matter in the blood,—whether the serous discharge be a morbid secretion set up for the ejection of the morbid poison, or a mere transudation of the thinner parts of the blood from the distended portal venous system,—in practice we scarcely require the information to guide us. We have vitiated blood, internal congestion, torpid nervous energy, feeble heart, checked secretions, and exhausting discharge, to contend with, whatever their mode or sequence of causation.

Many practitioners are sarcastic at the expense of the prescriber of "hot and cold in the same breath," and criticise unmercifully such a combination as that of ipecacuanha and dilute sulphuric acid. It may be worth considering, notwithstanding, whether in cases of cholera attended with extreme collapse and want of pulse, the antimonial treatment might not advantageously be conjoined with [the exhibition of ammonia, ether, brandy, or capsicum, the hot-air bath, or other internal or external excitant, with chlorate of potash, or some other saline, or with the copious exhibition of whey, instead of toast-water, in the hope that any such animal fluid absorbed might better supply the fluid and the salts which the blood has lost.
Lancet, Sept. 16, 1848, *p.* 312.

Dr. Gavin Milroy :—

[Almost all the best practical writers since the days of Sydenham, have recommended that the vomiting should be at first encouraged by the use of mild diluents; but this has been chiefly with a view to the expulsion of offending matters. Dr. Milroy observes:]

Obstinate and protracted vomiting will not unfrequently yield to a full dose of ipecacuan, after opium, creosote, effervescing draughts, &c., have been ineffectually tried. In other cases, I have found it to be best relieved by the administration of a purgative enema; the forced action of the bowels downwards suspending the inverted action of the stomach and duodenum, and thus affording us the counterpart to the arrest of a diarrhœa by the operation of an emetic. In both cases, the simultaneous use of an irritating epithem to the abdomen will prove a powerful adjuvant.

I would remark, that the medical practitioner will find it most useful, in every severe case of cholera, to superintend the action of the emetic himself; and, in a season like the present, it will save much time for him to carry some tartrate of antimony, or, what is better, ipecacuan powder, in his pocket; a small phiol of sal volatile also will be found very serviceable. Of course, the patient should always be in bed at the time: indeed, this remark is of universal application, as respects the use of emetics; otherwise, some of the most salutary after-effects of the vomiting will be altogether lost. *Med. Gaz., Oct.* 27, 1848, *p.* 717.

Mr. T. E. Baker :—

[At a meeting of the London Medical Society,]

Mr. Baker (Bengal Establishment) said—It is now thirty years since I first saw the disorder. The treatment then strongly recommended was, scruple doses of calomel, with half a drachm or a drachm of laudanum, in peppermint water. This treatment was often successful when the disease had assumed a milder form, but was very far from succeeding when it first broke out, and the patients would die in two, three, or four hours. We were not confident in any mode of treatment, but I think the most successful was an emetic in the first instance, which induced full vomiting, quite different from the spasmodic action caused by the disorder; afterwards, five grain doses of antimony, with or without calomel; bleeding; mild purgatives; flannel rollers to the extremities; lemonade, tea, plain water, or soda water. Full vomiting by emetics will often excite reaction, which seems the chief indication in our treatment. Bleeding diminishes the blood in the veins, and we find the venæ cavæ gorged with blood; the heart beats quick, weak, and indistinct; the breath is quite cold, for the blood does not circulate in the lungs. The tight flannel rollers relieve the painful spasms; they do not stop the circulation in the arteries, but may retard the flow of blood to the venæ cavæ, which we always find gorged. I much question the use of stimulants at any period of the disorder, though I have seldom seen marks of inflammation in the stomach where they have been given. There are often ecchymoses near the pylorus, which I considered to be the effect of spasmodic vomiting. We find the duodenum red and inflamed, and the inflammation appears to extend in proportion to the duration of the disease. The disorder appears to be the highest stage of congestive fever, and if we can succeed in making the blood circulate through the lungs, and consequently through the whole system, we have found a remedy for the disease. Though there are some symptoms similar to the cold stage of an ague, I do not remember to have noticed any tremor or shivering. In 1817, a medical friend of mine (Mr. Curling) found bleeding to be very beneficial, but in 1828, Dr. Mouat, surgeon, Her Majesty's 14th regiment, found it injurious, or at least of doubtful benefit. He also stated that some severe cases of cholera occurred in a native regiment, in which eleven men died out of twelve attacked. In these cases, there was purging without any vomiting, and to the best of his recollection (the patients not being under his care) there was a total absence of spasm.

Mr. Hird considered that emetics were useful in bringing on reaction. He referred to the plan of treating the disease by calomel and opium, as extensively tried in 1832. That plan had been found wanting. The experience of Dr. Graves confirmed this. He (Mr. Hird) had found no benefit from large doses of calonel or opium. The acetate of lead appeared to him to have the most effect in stopping the profuse alvine discharge. This medicine was given in doses of two grains, with an eighth to a twentieth of a grain of opium, every half hour, according to the severity of the symptoms.
Medical Gazette, Nov. 17, 1848, *p.* 854.

Dr. Graves, of Dublin:—

[Dr. G., in his work on clinical medicine, advocates the use of acetate of lead and opium. He says:]

The mode in which I administered it was this:—a scruple of the acetate of lead, combined with a grain of opium, was divided into twelve pills, and of these, one was given every half hour, until the rice-water discharges from the stomach and rectum began to diminish. In all cases where medicine promised any chance of relief, this remedy was attended with the very best effects. It gradually checked the serous discharges from the bowels, and stopped the vomiting. I need not say of what importance this is: as long as these exhausting discharges continue, as long as the serum of the entire body continues to be drained off by the intestinal exhalants, what hope can we entertain? What benefit can be expected from calomel and stimulants, when every function of the digestive mucous membrane seems to be totally extinguished, except that of exhalation, and while profuse discharges, occurring every five or ten minutes, are reducing the patient to a state of alarming prostration? Knowing the inevitable fatality of all cases where these discharges went on unchecked, I was happy at having discovered a remedy which seemed to possess more power in arresting them than any yet devised, and this impression was confirmed by the results of subsequent experience.

That the acetate of lead will succeed where all other astringents fail, was proved by the case of Mr. Parr, of this hospital. Having got an attack of threatening diarrhœa, at a time when cholera was prevailing in Dublin, this gentleman used various kinds of astringents, and took so large a quantity of opiates, that he became quite narcotized, but without any relief to his symptoms. When I saw him he was as bad as ever, and was beginning to exhibit appearances of collapse. I advised the use of pills composed of acetate of lead and opium, in the proportions already mentioned, and had the satisfaction of finding that before night the diarrhœa had ceased. The pills are to be used one every half hour while the diarrhœa remains unchecked, but as it begins to diminish, the intervals between each pill may be prolonged, and in this way the patient may be gradually prepared for leaving off the remedy altogether. I have frequently given in this way as much as forty grains of acetate of lead in twenty-four hours, with great advantage to the patient, and without any bad consequences ensuing.

It is unnecessary for me to say any more on this subject; If I chose to mention names, I could bring forward the names of many medical men in Dublin, whose lives, I am happy to state, were saved by the use of this remedy. I may, however, observe, that this mode of treatment has now become universal here, and that it has almost completely superseded the use of calomel and opium. I will confess that this fact is a source of high gratification to me, and I point also with pleasure to the fact, that since it became extensively known (as it did during the last invasion of the epidemic), the profession has gained more credit than before, and the number of cures has been proportionally greater.

I may remark that the most convenient way of making the pills is to add five or six grains of powdered liquorice to the scruple of acetate of lead, and mixing into a mass by means of mucilage of gum-arabic. Year after year since I first made public the value of this plan of treatment in cholera, I have received the most gratifying letters as to its successful employment, from practitioners in India. The following observations of Dr. Parkes, who had the opportunity of witnessing two recent outbreaks of cholera in India 1843 and 1845, while serving as assistant surgeon in one of H.M.'s regiments, I look on as a most valuable testimony. I quote from his essay on Cholera, to which I have already referred. At page 207 he says:—

"Of all the astringents which have been used in cholera, none has appeared so efficacious as the one recommended by Dr. Graves, viz., the acetate of lead. It is true that it did not arrest the purging in all cases, but it possessed this great advantage, that in the form of pill with opium, it did not seem to increase the irritability of the stomach, but rather to allay it. I used to give two or three grains with a quarter of a grain of opium, every half hour for the first two or three hours, and then every hour for a variable period, according to the intensity of the case. It was often found that the vomiting first ceased, and then the purging; the Algide symptoms were of course unaltered, but, as already said, no remedy yet known possesses any influence over them, and it is the best way to leave them altogether to themselves, and take the chance of their not advancing to their full extent. The only bad effect I ever noticed after the employment of these large doses of lead, was subacute gastritis; but this is a comparatively trifling affair, and can be generally overcome by relays of leeches to the epigastrium during the period of reaction."

Dr. Thom, surgeon of the 86th regiment, in an account of the cholera, as it affected that regiment at Kurrachee in 1846, thus speaks of the combination:—"The acetate of lead, in doses of one, two, or three grains, and one-eighth of a grain of acetate of morphia, was employed to stop those profuse watery dejections which continued in some cases after reaction had taken place; and in this point of view it was a most useful remedy. Of course in those cases where vomiting and purging are the first symptoms, and collapse appears to be their consequence, the early use of this remedy was resorted to, and with very good encouragement."

It is no small compliment to Dr. Graves, that the suggestions for the treatment of cholera patients, just issued to the Parochial boards by the Royal College of Physicians and Surgeons of Edinburgh, include among the medicines, the pills of acetate of lead and opium, which are directed to be kept constantly at each station. This will insure a full and fair trial for this mode of treatment. *Medical Gazette, Nov. 3, 1848, p. 760.*

Dr. E. J. **Shearman**, Rotherham:—

I have been much delighted and instructed by the perusal of Dr. Parkes' late valuable contribution to the little stock of knowledge we possess of the pathology of cholera; and cannot help remarking that, to me, his information appears more likely to be correct than that of any other author. I saw a good deal of it in 1832, and there is a truthfulness about his researches which carries conviction with them.

Dr. Parkes distinctly proves, that in the stage of collapse the right side of the heart does not empty itself; all the branches of the pulmonary artery are gorged to the greatest extent; there is no blood in the lungs; and the left side of the heart and arteries are empty; the serous, albuminous, and saline parts of the blood ooze through the different tissues, and are evacuated; the fibrine of the blood alone being found in the intestines.

Now this must be owing either to the choleraic poison having so chemically altered the blood that the oxygen of the atmosphere cannot act chemically upon it, and the venous blood remains in the pulmonary artery; or the choleraic atmosphere is of such a nature as to prevent the chemical combination of it with the blood of the individual in respiration. Unfortunately, Dr. Parkes had not the means of chemically and pathologically examining the bloood of his cholera patients; but the *former* position appears the most tenable, from the immediate good effect produced by injecting a solution of albumen and salts into the veins, which, unhappily, does not last long enough to allow nature to weather out the disease.

When a case has reached this period, it is almost invariably fatal, for no absorption can take place, the venous system is full, and all medicine and nourishment introduced into the stomach must be useless. But may not the red globules of the blood become poisoned and useless? And if so, what use would the albumen and salts be, if there were no oxygen carriers?

Reflecting on this subject since reading Dr. Parkes' work, I have made up my mind, should nothing more be discovered respecting the pathology of cholera, and considering the failure of every other mode of treatment, that I will treat any cases verging into the stage of collapse, by first taking away as much blood as I reasonably can from a vein in the arm, (no easy matter,) and then immediately transfuse warm blood from the most healthy subject I can meet with; and keep up respiration as long as possible with a mixture of equal parts of oxygen gas and atmospheric air. Although this will not dislodge from the branches of the pulmonary artery the poisoned blood, it must give nature a better chance of carrying on circulation and respiration, than by injecting merely albumen and salts, without any healthy red globules.

I think respiration may be carried on, in such cases, by using a modification of my friend Sibson's mouth-piece, which he invented for the inhalation of chloroform: and oxygen gas can be kept ready prepared over water for a great length of time.

The first, or premonitory stage of cholera, requires merely common astringent remedies. The next stage, where the vomiting and purging are accompanied by cramps, seems to admit of two grand modes of treatment—viz., tartar-emetic, and acetate of lead with opium; together with various external remedies, to relieve particular symptoms. In 1832, I only became acquainted with Mr. Hott's (of Manchester) treatment by tartar-emetic, when the disease was subsiding; but all the cases I treated with it certainly recovered. In the Lancet for the 16th of September, 1848, there is a valuable communication from my friend Dr. C. Radclyffe Hall on this subject, well worth perusing; and I can add my testimony to the success which attended that mode of treatment.

Lancet, Oct. 14, 1848, *p.* 418.

Dr. C. **Cowan**, Physician to the Berkshire Hospital:—

[States that Lieutenant-General Welsh, of the Madras army, has communicated the following mode of treatment, which he (the general) has found extremely useful.]

Treatment.—If the patient is young or middle-aged, vigorous and sanguineous, and no medical aid at hand, a vein should be opened, and twenty or thirty ounces of blood taken, to insure which, the blood in most cases becoming dark and stagnant, it is necessary after the incision, to rub the arm, and put the feet in hot water, (if a hot bath cannot be procured,) as well as to administer and continue warm anti-spasmodic draughts, with warm frictions, and applying hot substances to the body and extremities, of which a very simple and efficacious one is sand, heated in a pan over a fire, and put into small linen bags or old stockings, and kept in contact with the hands and feet, stomach and spine; no quantity of liquid to be given, and nothing cold, particularly water, for which the patient usually has an incessant craving. Warm gruel is, perhaps, the best vehicle for everything.

Various stimulating medicines have been tried by different people, with pretty nearly the same effect; and I have at times, when travelling, and nothing else was at hand, given essence of ginger, brandy, laudanum, peppermint, &c., but where all the articles could be procured, I would recommend, (always and only in the absence of medical aid,) in addition to an immediate warm bath, half an ounce of the following mixture, more or less frequently, in a little warm gruel:—Opium, dr. j.; camphor, dr. j.; ginger, dr. j.; cardamoms, dr. j.; capsicums, dr. iss.; arrack or brandy, oz. viij. M. To be infused for seven days.

If this not be prepared, half a glass of brandy, with forty or sixty drops of laudanum, and twenty or thirty drops of essence of peppermint, may be substituted; or twenty grains of camphor, or from a tea to a dessert-spoonful of essence of ginger, either dose to be repeated every half hour or oftener, if not retained on the stomach, till a favorable change becomes visible. Warm enemas have proved beneficial, especially when the retching continued and the draughts were returned, and in once instance, succeeded, when all hopes by other means were at an end. Calomel in large doses was used by the faculty in India, and successfully I believe; but I never had an opportunity of trying it, because there was not any to be purchased during the first two or three years of the pestilence.

Signs of Cure.—The first indications of amendment, where the blood has been originally congealed, are—its becoming limpid, and flowing freely, a return of the pulse, of warmth in the body, of softness and pliability in the skin, and falling into an easy slumber; but the most certain prognostic of a cure is the free passage of urine. A sleep of some hours succeeds, and the patient generally awakens to convalescence; I say generally, for in the course of my experience some few apparently relieved fell into a quiet slumber, from which they only awoke to breath their last sigh, or expired without awaking at all.

After Treatment.—As soon as the first attack has been got over, a large dose of castor oil should be given, or a strong bolus of calomel and opium, and after its operation, if no fever should intervene, the patient should be warmly clad, and nourished with cordials and plain wholesome food, in small quantities, but particularly avoid all fruit, vegetables, or cold draughts, for some considerable time, as every relapse is attended with the utmost danger.

In conclusion, our author remarks, "as nothing is so conducive to illness, particularly the one in question, as terror or alarm, I would earnestly recommend to all my fellow creatures to place a cheerful reliance on the all-sufficient protection of a long suffering and ever gracious Redeemer, and to be prepared, by a life of faith and consequent usefulness, for whatever may befal them." *Prov. Med. and Surg. Jour., Nov. 1, 1848, p. 596.*

DR. CLUTTERBUCK:—

[At a meeting of the London Medical Society, Dr. C. stated that in the cases of cholera which have occurred recently in the Peckham Lunatic Asylum, the administration of chloroform (by inhalation) was productive of the greatest benefit, speedily relieving the spasms and pain. MR. GARRETT coincided with him in opinion, and stated that the cases at Peckham were decidedly of the malignant kind. Mr. G. said:]

Brandy and capsicum were first administered, the patient being in bed. Chloroform was then resorted to: this agent he considered to be beneficial by producing reaction. By forced respirations the pulse rose, and by the time the patient became fully under the influence of the chloroform, the body was warm. He believed that without the chloroform there would have been no reaction, for opium would not have developed its effects under two hours. The cases were undoubtedly those of spasmodic cholera.

Medical Gazette, *Nov.* 3, 1848, *p.* 767.

DR. HILL:—

[The following account of the treatment of malignant cholera by *chloroform* at the Peckham Lunatic Asylum, is given by Dr. J. Hill, the resident surgeon. The inhalation of chloroform was suggested by Mr. F. Ferguson, assistant surgeon to the asylum, and was employed in ten cases of malignant cholera with perfect success. Dr. Hill says:]

The following is our usual mode of treatment:—Place the patient in bed in warm blankets; give a glass of brandy in hot water, with sugar, and spice; apply friction to the body by means of warm flannels; and an embrocation composed of liniment, saponis comp., liniment camphoræ comp., tinct. opii, and extract. belladonnæ; apply to the whole surface of the body bags filled with heated bran; place the patient under the influence of chloroform by inhalation, and keep him gently under its effects as long as the bad symptoms recur, (which they frequently do on its effects ceasing and his regaining consciousness). Give in the intervals small quantities of brandy-and-water, and thin arrow-root or milk for nourishment, along with milk-and-water, or soda-water with a little brandy for drink. Avoid everything else in the shape of medicine, and trust to the efforts of nature in rallying from the poison of the disease.

Of course great caution is necessary in administering the chloroform, and in not pushing it too far. In some instances the patient will sleep for twenty minutes or half an hour—in others, for several hours; and on waking will again be seized with a return of the vomiting and cramps, when the chloroform must again be resorted to, and the patient kept in a great measure under its influence till these symptoms abate. One of our cases required its use at intervals for twenty-four hours. Again, the reaction after its use may be so great as to require gentle bloodletting; which occurred in two of our cases, both being persons of full habit of body and sanguine temperament, the one a nurse, and the other a male farm servant.

Should the simple apparatus commonly used in the hospitals for administering it be not at hand, a small teaspoonful may be poured upon a towel, and will answer very well. That which we use is of great purity, and procured chiefly from Messrs. Gifford and Linden, chemists, 104 Strand.

Lancet, *Nov.* 4, 1848, *p.* 514.

Mr. P. BRADY, of Harrow:—

[Mr. B. gives us the following case, treated by *chloroform taken as a medicine*, and not inhaled:]

Mary Parratt, aged 60, ordinarily enjoying good health, was on Saturday, the 29th ult., attacked with slight diarrhœa, for which the usual homely remedies were used. On the following morning at six o'clock, A.M., the diarrhœa became profuse; excessive vomiting supervened, accompanied by spasms in the calves of the legs, fingers and toes.

Notwithstanding the urgent nature of the symptoms, reliance was still placed on the favourite remedy, brandy, without avail, however; the dejections became incessant, the spasms increased in intensity, and at nine o clock A. M. on Sunday, the 30th ult., I was called in to see the patient, who, it was affirmed, was in a "dying state." Believing, from the description given, that I should have to treat genuine malignant cholera, and having predetermined, should such a case present, to try the effect of chloroform administered internally, I took with me the following mixture:

℞. Chloroform, ʒj.; ol. terebinth., ℥j.; aq. dest., ʒiij. M.

On my arrival I found the patient presenting all the symptoms of malignant Asiatic cholera in an advanced stage: the features collapsed and ghastly; extremities and tongue cold; burning sensation in the stomach and œsophagus; pulse rapid and scarcely perceptible; voice diminished to a whisper; stomach exceedingly irritable, and the dejections from the bowels presenting the characteristic rice-water appearance; and all the voluntary muscles of the body were affected by spasm, so that the patient actually writhed in agony. I immediately administered a large teaspoonful of the chloroform mixture (containing about six minims of chloroform and forty of turpentine) in a wine-glass of dilute brandy, and applied sinapisms to the calves of the legs and abdominal and thoracic surface. Thirst was relieved by drinking plentifully of water, nearly cold. Notwithstanding the irritable state of the stomach, I had the satisfaction to find that the chloroform draught was retained, as well as the fluid drunk after it, and was followed by no dejection. I now (half an hour after the draught) gave two of the following pills:—

℞. Calomelanos ℈ss.; fellis bov. inspis., ℈j. M. et divide in pilulas quatuor.

In an hour after the administration of the chloroform vomiting ensued of a portion the fluid drunk, slightly tinged with the gall; this soon subsided, the diarrhœa had apparently ceased, and the cramp diminished in frequency and severity. I now administered a second dose of the chloroform mixture and soon after repeated the pills. The stomach retained both; she soon felt decided relief; the pulse rose in power and became slower, the spasms less frequent, and in an hour after the second dose she was bathed from head to foot in a warm perspiration, and expressed herself comparatively free from all uneasy sensations. The attack had been completely subdued, leaving behind a good deal of pyrexia and debility, from which she is now rapidly recovering. *Medical Times, Aug.* 12, 1848, *p.* 237.

Mr. G. Plimmer :—

Mr. P. relates another case of cholera in which choloroform was given as a medicine. He says:]

I am determined on giving chloroform, after giving hydr. chlorid. with opium, which was immediately rejected. I gave the following mixture:—Chloroform, ♏vj.; brandy, ʒiij.: water, ℥ijss. I gave a third part, which was thrown up in half an hour: I gave him a second dose, which was retained; the vomiting and diarrhœa ceased; the spasm less severe. I gave him, in two hours, the remaining part, and during the next six hours I administered, in two doses, six minims more of the chloroform with the most decided benefit; and he is now, the 17th inst., convalescent. 'To the extreme tenderness over the region of the epigastrium I applied flannel soaked in rectified spirits of turpentine. I observed there was no urine secreted, and I am firmly of opinion that the usual remedies would not have met this case. I candidly confess I had no hope of success, from its severity, and, but for Mr. Brady's case, I believe I should have lost my patient. *Medical Times, Sep.* 16, 1848, *p.* 321.

J. B. Stedman, Esq.:—

[A woman, 55 years of age was attacked by English cholera, and treated by Mr. Stedman in the usual manner. He tells us:—]

About three o'clock on the following morning I was hastily aroused by her husband, as the patient had become much worse. All her symptoms had increased to an alarming degree; the spasm was universal and excessively violent, "as if knots were being tied in her bowels;" vomiting incessant; countenance livid and cold; articulation feeble, praying to be released from her sufferings. As all the medicines had been rejected, I thought it fruitless to continue them, but at once decided upon administering chloroform. A mixture composed of the following was prescribed :—

℞. Chloroform, gtt. xiv.; aquæ vitæ (cogn.,) ℥j.; aquæ destill., ad ℥vj. M.

A fourth part was given immediately, which had a partial but most satisfactory effect: an abatement of all her symptoms was the immediate consequence. In two hours a disposition to a recurrence manifested itself, when a second dose of the mixture was administered, which entirely controlled all spasms, vomiting, and purging. She expressed herself "very comfortable," and fell into a quiet sleep. At nine o'clock I again saw her, and found her suffering only from some febrile symptoms, accompanied with much exhaustion. She was ordered cold rice and mucilaginous drinks, and had the chalk mixture with nitric ether prescribed. A dose of ox-gall (gr. x.) was given in the course of the day, which produced three bilious evacuations and some disposition to vomiting, which soon passed away. In two days she was declared convalescent.

In 1832, when the cholera visited this place, my patient was attacked, but she declares her sufferings then were nothing in comparison with her late disorder. The two remaining doses of the chloroform mixture were ordered to be carefully preserved in case she had any return of her symptoms. A daughter, grown up, who had assiduously attended upon her mother, was on Wednesday evening seized in precisely a like manner, except that the dejections were more abundant and frequent; and the mother, without hesitation or appeal for advice, gave her the two remaining doses of the mixture. The same magic result followed; the first dose was only partial in its effect, but the second completely subdued the disease. When I called on Thursday, the gratifying announcement was made to me of the success of my medicine in a second case.

Perhaps I am not justified in calling these decided cases of Asiatic cholera, but the disease in its latter stage, in the case of the mother, assumed a much more severe type than our English form usually bears. Without offering any remarks upon the *fons et origo* of the malady in its worst form, and with prospective fears of its soon visiting our shores, I am but too happy (in conjunction with Mr. Brady) in being able to report so favourably of a remedy which I believe only requires to be more extensively tested to be appreciated. *Medical Times, Aug.* 26, 1848, *p.* 271.

Mr. C. E. J. Jenkins :—

[Mr. J. states that in 1832, he treated cholera with *strychnine* and cold water in the following manner:]

Pure strychnia, one grain; conserve of roses sufficient to form eighteen pills: one to be given every quarter of an hour, and washed down with copious draughts of cold water, which the patient will greedily and gratefully imbibe. The first three or four pills will be probably ejected, but the subsequent doses will be retained, and their good effect, in conjunction with the water, speedily perceived. With regard to the *modus operandi* of these remedies, I apprehend that strychnine, being the most powerful tonic known, acts in that capacity on the prostrate nervous system; and that the cold water in the first place replaces the loss of the fluids, and in the next, by its coldness, constringes the papillæ of the mucous membrane, thus suppressing their outpourings; lastly, that, by its volume, it distends and gives tone to the otherwise empty and flaccid intestinal tube.

Lancet, Sep. 2, 1848, *p.* 263.

Mr. J. R. Hancorn :—

[Mr. H. states that the plan which he here recommends, was found successful in a great number of cases, in 1831–2: it is therefore deserving of our consideration. He begins by relating the treatment for the diarrhœa, which sometimes ushered in the attack of cholera; observing that]

If the attack begin with a feeling of nausea, a very gentle emetic may preface the other remedies, as pulv. ipecac. ℈ij.; but, if there be merely uneasiness and relaxation of the bowels, then the following

℞. Extr. opii, gr. ij.; hyd. chlorid. gr. iv.; in pill, to be followed in two hours by castor oil, ½ oz.

About two hours after this, give two table-spoonfuls of the following mixture every two, three, or four hours, according to the urgency of the symptoms:—

℞. Ammon. sesquicarb. ℈j.; sodæ sesquicarb. ʒj.; conf. aromat. ʒj.; tinct. capsici, ♏xxx.; liq. opii sedat. ♏xxx.; misturæ camph. ad. ℥vj. misce.

℞. Hyd. c. cret. gr. iij.; pulv. capsici. gr. iij.; in powder, to be taken every four hours, as well during the collapse stage as that of simple diarrhœa, always taking care that the mercurial preparation be not carried too far; it being of the utmost importance to keep up the secretion of the liver, the proper action of which will be found to be the great security against the after consequences, viz., typhus fever.

Should the Asiatic cholera supervene, I would strongly urge my professional brethren to try the styptic remedy which I found so remarkably successful in 1832, viz., *tinctura ferri sesquichloridi*. This was my sheet-anchor, and I gave it in as concentrated a form as possible immediately after each ejection.

Whatever may be the nature, cause, or original seat of disease in Asiatic cholera, the effect produced appears to be an atony of the secretory and excretory ducts and mucous follicles. It therefore follows as a natural indication to restore power and tone to these vessels as speedily as possible, and this is best effected by the administration of styptics. When I used the tinct. sesquichor. in 1831–2, its immediate effect in reducing the quantity of fluid ejected was truly astonishing, and it gradually diminished after each dose, until it ceased altogether, and the cure was effected. It should be remarked, that, after this medicine, the evacuations, instead of being like rice-water, are black. This should be explained, otherwise the bystanders become much alarmed, and fancy that mortification has ensued.

As a local application for the relief of cramp, I found the following liniment far preferable to mustard poultices, not only from its stimulating properties, but because the requisite friction in using it is of itself an efficacious remedy:—

℞. Acid. sulph. fort. ʒiss.; ol. olivæ, ℥iss. M. ft. liniment.; the only objection to its use being its destructive action on the linen, which is of little moment, considering the direful nature of the malady.

The hot-air bath should be had recourse to. This is easily effected by means of a small spirit-lamp and apparatus on the principle of Sir H. Davy's safety-lamp, which is merely placed under the bed-clothes, when any degree of heat may be induced. I cannot too strongly urge the avoidance of brandy or large doses of opium: they both enervate the system, prostrate the vital energies, and though the extreme coldness of the surface of the body, the coldness of the tongue—nay, the coldness of the breath itself—would seem to indicate the former, yet it is not so, for the patient complains of the most agonising thirst, and intense heat in the epigastric region, which is best allayed by the free use of iced soda-water, iced champagne, and even small pieces of ice retained in the mouth, and occasionally swallowed. *Medical Gazette, Sept.* 15, 1848, *p.* 452.

Dr. Leonard Stewart:—

[At a meeting of the London Medical Society, Dr. S. said:]

He had seen one plan of treatment successful, which was suggested to him by a friend who had been long in the East Indies; he tried it in one decided case. Six grains of tartarized antimony were dissolved in warm water, and half given, and repeated in half an hour: the first dose increased the symptoms, the second threw the patient into a violent heat and perspiration, and in ten minutes he was a changed man, and got quite well without any further treatment. This was the only case he had treated on this plan, but his friend had used it frequently. As to opium, and other plans of treatment he had no faith in them.

Mr. Hird had seen much of cholera on a former occasion, in the north of England and in Dublin, and it appeared to him to be contagious under certain circumstances; he had seen cold water tried very largely, and in these cases the disease did not seem to be followed by the consecutive fever which killed so many of the patients treated by calomel and opium. He should be inclined to try mustard emetics, repeated every hour or half hour, as they did not depress the system like tartarized antimony. He should also aply mustard poultices, hot bottles, and frictions of warm turpentine in the later stages, to check the enormous secretion from the bowels. He should give two grains of acetate of lead, and half a grain of opium every hour or two, for a few times. A friend of his had recommended carbon in these cases; and it was a fact that the cholera did not visit many of the places where there were springs containing carbonic acid gas. He had certainly seen great relief from effervescing draughts containing carbonic acid gas.
Medical Gazette, Oct. 20, 1848, p. 682.

Dr. Willemin, of Cairo:—

[Dr. W. recommends the use of the resinous extract of Indian hemp in the treatment of cholera. *Med. Times, Oct. 28, 1848, p. 48.*

Mr. F. Ward:—

[Recommends the following contrivance for hot-air baths.)

I obtained a planed deal board, two feet long, one foot wide, one inch thick; this I had cut into a semicircle, and perforated in the centre by a hole, one inch in diameter, to receive a curved tin tube, two feet long; this formed the base or end; to the curve of this board I had stout wicker rods, three feet six inches long, at intervals of two inches, made secure by being inserted into the wood, and worked across, at one foot distance, with wicker or basket work, and at their ends to form a semicircle the same size as the board. The tin tube is circular, curved in the shape of a horn, the small end one inch in diameter, and made to fit air-tight in the hole of the board; the large end three inches in diameter. A small spirit lamp completes the apparatus.

Mr. C. M. Thompson:—

[Recommends the following apparatus.]

It consists of a slight frame, similar to a fracture cradle, about six feet in length, two feet and a half broad, and one foot high. This frame, for the convenience of carriage, is divided into two parts, which slide into each other in telescope fashion. The foot of the frame is solid, with an aperture in the centre, to admit the nozzle of a tin case, which holds a small tin spirit-lamp, with two wicks.

The mode of applying it is to place the frame directly over the body-linen of the patient; several blankets are then put over the frame, and well-tucked in, covering every part of the body except the head. The lamp is then adjusted, and the hot air rushes in the cavity. In ten or fifteen minutes reaction is usually established. The lamp is then removed, and the frame withdrawn, leaving the patient enveloped in the blankets in a profuse sweat. The vomiting and cramps generally subside at the same time. During the whole process the patient should drink plentifully of hot mint tea.

Dr. Wood, of Peckham.—

Says, I have been in the habit of recommending a cheap and easy mode of applying the vapour bath, for many years, by placing a hot brick in a tub of wrter, the patient being enveloped in a flannel gown or blankets round it, of course the head external. I have found this convenient, expeditious, and of great comfort to both rich and poor. At the same time I beg to observe, that I think medical men lose sight, in many cases of debilitated patients, of the great advantage of the vapour bath over the hot bath, the latter sometimes losing its beneficial effects by the patient being exposed to its influence too long."

Mr. H. Hulme, of Liverpool:—

Sends us a drawing of an apparatus, which, he says, "can be made by any tinman, at a very small cost."

1. It consists of an iron cup for spirits of wine, two inches and a half wide.

2. A furnace made of sheet-iron, with chimney.

3. Rings to support the chimney in the centre of guard, which must be fastened by rivets to the guard.

4. Guard for chimney, to keep the bed-clothes from being burnt, two feet long by eighteen inches in diameter.

This apparatus is to be placed on a stool at the foot of the bed, and the guard introduced under the bed-clothes, which are to be propped up by pieces of stick, so as to admit the hot air equally over the whole surface of the patient.

Dr. R. Chambers:—

Dr. R. C. suggests a spirit-lamp encased in a double cylinder of wire gauze, and enclosed in a light wooden framework. I had it (says our correspondent) almost in daily use during a period of five years that I was physician to the Essex and Colchester Hospital, and I feel myself justified in stating, that for efficiency, portability, and facility of application, it has no equal. Indeed, I deem it to be an indispensable appendage to the armamentarium of every hospital and surgery.

About one ounce and a half of rectified spirit will keep it in action for an hour. When desirable, the vapour of camphor may be conjoined with it, by placing about two drachms of camphor upon the top of the gauze-cylinder, the heat of which volatizes it.

For application it only requires to be trimmed as an ordinary spirit-lamp, and when ignited, to be placed between the patient's lower extremities, an extra blanket being placed upon the ordinary bed-clothes.—From fifteen to thirty minutes will be sufficient for a single application, and so powerful is it, that I have known the perspiration to drop through the bed.

I regret to say that I do not know to whom the merit of the invention is due. It is manufactured by Mr. Wallis, an iron-monger at Colchester, who received the pattern many years ago from an old gentleman, who used it for chronic rheumatic gout. In a communication which I had from Dr. Golding Bird on the subject some time ago, that intelligent physician informed me that he remembered to have seen something similar exhibited many years back at the Medical Society of London.

Lancet, *Oct.* 7, 1848, *p.* 402.

172.—ON SOME IMPROVEMENTS IN THE VOLTAIC BATTERY.—By Dr. T. Wright.

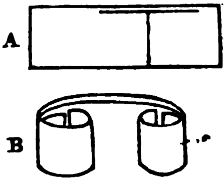
[Having established the principle of *the inactivity of zinc in a mixture of concentrated nitric and sulphuric acids*, Dr. Wright proceeds to show how it may be applied in the construction of batteries for medical and other purposes. He tells us :]

2. The battery essentially consists of a positive plate of zinc associated with a negative plate of the same metal covered with platinum, the former immersed in a solution of some neutral salt or caustic alkali, the latter in a mixture of nitric and sulphuric acids. The intermixture of the two liquids is prevented by the intervention of a porous cell, which may be formed of garden pot-clay, pipe-clay, or plaster of Paris. The cheapest and most convenient form of the apparatus is constructed in the following manner:—Take a common jelly jar two and a half inches in diameter, and line it with a strip of the thinnest sheet zinc two inches wide, from the edge of which a narrow strip or ear is cut, turned over the edge of the jar, and twisted to a copper wire (No. 20); within the zinc place a small porous earthenware garden-pot rendered water-tight by a plug of sealing wax, and within this again place a roll of platinized zinc, to which a similar wire has been twisted. The battery is now complete; on charging it, pour

a saturated solution of common salt or muriate of ammonia in the space without the porous cell and within it, and in contact with the platinized zinc the nitro-sulphuric acid.

3. The nitro-sulphuric acid consists of *nitric acid one part and sulphuric five parts.* In such a mixture the zinc, one of the most oxidizable metals, is as inactive as a plate of glass or porcelain; but a very slight deviation from the above proportion by the addition of nitric acid or water dissolves the charm, the metal is acted on, and the platinum is thrown off its surface, for which reason it is advisable to let the nitro-sulphuric acid have an elevation within the porous cell, higher than that of the saline solution without it.

4. I have now described the mode of constructing a single cell of the battery, which is well adapted for use in conjunction with the electro-magnetic coil machine; but when the instrument is to be applied to the decomposition of saline or other fluids, it is proper to use from four to six cells in series, the zinc roll of one cell being in connexion with the platinized zinc of the cell next to it. In constructing a compound battery of this kind, the alternate cylinders of zinc and platinized zinc are cut from the same slip ofmetal by a T-shaped incision, and bent into rolls as in the figure, in which A indicates the zinc cut, and B the same slip bent into the proper form, the same cylinder being afterwards platinized nearly up to the top: the zinc and platinized cylinders at each extremity of the series are of course unconnected, and have wires twisted to them to serve as poles or conductors. I think it will be at once understood that screws or joinings are unnecessary in this battery, however extended the number of pairs in series may be.



5. The zinc is easily platinized, after having been cut and moulded into the requisite shape, by dipping it for a few seconds in a solution consisting of saturated solution of chloride of platinum, ʒss.; sulphuric acid, ʒjss; water, ℥ij; it is then washed and quickly dried, and is found to have assumed a smoky tinge from the minutely divided platinum adhering to its surface.

6. For the administration of the galvanic shock and current, I use a small battery constructed in the following manner:—A plate of thin sheet zinc three inches by four is platinized to half its width, and cut into twelve slips, which are bent into the form of the letter U, the dark leg of which represents the platinized leg of the bent slip. Twelve of the glasses used in pewter ink-stands are then filled with moistened table-salt, and a tobacco-pipe bowl, rendered water-tight by sealing-wax, is thrust into each of them, and instantly filled with the acid mixture (3,) before the saline solution has time to percolate through it; the glasses are then ranged in a double line, and the zinc arcs placed in them, each having its platinized leg in the acid mixture, its unplatinized leg in the salt of the glass next in series; fine iron wires twisted round the slip at each extremity are conducted into basins of salt and water, from which the shock may be taken by immersing the hands therein. This small arrangement affords a stronger shock than a Cruikshank battery of fifty pairs of plates, accompanied with a strong sensation of heat in immersing and removing the hands from the basin.

7. Several forms of the platinized zinc battery were brought by me before the Medico-Chirurgical Society of Edinburgh, the apparatus used being a single cell (2), in conjunction with an electro-magnetic coil machine; a compound battery of four cells (4), the poles of which terminated in platinum plates immersed in dilute sulphuric acid, and the small compound battery (6). The sparks from the first of these arrangements were most brilliant, the second decomposed the water of the dilute acid with great rapidity, and the shock from the third was perfectly satisfactory to several

of the members who experienced it, even after the battery had been charged more than three hours.

8. In an economical point of view, this battery is much superior to any other; its intensity is four times greater than that of Smee's battery, the arrangement now in common use, at about a fiftieth part of the cost, as it can be put together by any one having a little sheet zinc and a pair of scissors. The saturated solution of platinum is about 2s. per oz., a sixteenth part of which quantity is sufficient to platinize more than a dozen cylinders.

9. The cells should always be well washed after use, during which process a great part of the platinum is removed; it will therefore be advisable to dip the cylinders in the platinum solution before again using them.

Monthly Journal, Aug. 1848, p. 131.

173.—ON CERTAIN SANATIVE EFFECTS OF GALVANISM.—By T. S. WELLS, Esq., Surgeon, R.N.

[Mr. Wells describes certain applications of galvanism which he saw in the practice of Dr. Cogevina, at the Civil Hospital of Corfu. He says,]

The apparatus employed is very simple. It consists of an oval plate of zinc, from two to four inches in diameter, according to circumstances, to the back of which a flexible wire of pure silver is soldered; and at the other extremity of this wire, a plate of pure silver of the same size as the zinc, is also soldered. The length of the wire is unimportant, varying according to the distance at which the two plates are applied from each other.

[With this apparatus, galvanism was employed in the treatment of ulcers, fistulæ, fungous growths, and certain nervous disorders; and instead of moxa in the formation of issues. The general rules laid down for the employment of galvanism in this form, are the following:—]

1. To secure the effects of the apparatus, it is necessary that the surfaces of the two metallic plates be perfectly smooth and clean, and that each be closely applied upon a part of the body denuded of cuticle. Thus, when the effect upon one open surface is required, a small puncture must be made at some other part of the body to form the second.

2. Experience has proved that one of these surfaces must be superior, the other inferior, and that the plate of zinc must always be above that of silver.

3. When the plate of zinc is placed upon a slight excoriation, and that of silver upon a suppurating surface, the excoriation beneath the zinc plate is in two days converted into a superficial eschar an inch in circumference. In six days, the apparatus being still constantly applied, the eschar extends to the subcutaneous cellular tissue, and presents all the characters of a slough produced by caustic potass, except that the dead tissues are a little less compact. Cicatrization of the ulcers left after the separation of these sloughs being very tardy, it is necessary in most of the therapeutic applications of the apparatus, to change the situation of the zinc plate every second day, and with this precaution no inconvenience results from the superficial sores.

4. When an ulcer presents an indolent or lardaceous base, this unhealthy base is destroyed, and the surface becomes a healthy granulating one after three days' application upon it of the zinc plate. In this case the natural or artificial abrasion upon which the silver plate is applied must be inferior to that upon which the zinc is applied, or the good effects do not follow.

5. The zinc plate applied in the same manner upon flabby exuberant granulations or fungous growths, rapidly destroys them.

6. When the silver plate is applied to a surface simply denuded of skin,

the zinc being placed superiorly upon another such surface, even although the former be freely suppurating, it is very rapidly dried, and covered with a dense pellicle.

7. When two plates are similarly applied, the surface beneath the silver being a deep ulcer, rapid and healthy granulation follows. If the silver plate be left upon the granulating surface after this has reached the level of the surrounding integuments, the granulations become exuberant and flabby, sometimes fungous. In practice, therefore, the apparatus should be removed as the granulations reach the surface, and when this is done, spontaneous cicatrization follows.

8. When the silver plate is applied upon the superior portion of a very large ulcer, this portion only improves in appearance, while the inferior portion degenerates; but, if the plate be applied upon the lower portion only, the whole surface of the ulcer improves equally.

9. In cases where several ulcers exist upon a limb, and the zinc is applied to a superior, and the silver to an inferior one, or to denuded surfaces, all the ulcers situated in a direct line between the two plates improve in appearance, and become healthy sores, and cicatrize, while those on either side of the current remain unaltered, and sometimes degenerate.

10. When the silver plate is applied upon the extremity of a fistulous sore, but little effect is produced; while, if a projecting portion of the silver be carried to the bottom of the fistula, granulation rapidly follows. To fulfil this object, Dr. Cogevina has silver plates perforated by screws of the same metal, the points of which are adapted to the shape of the fistula, and readily projected more or less by a simple turn of the screw. The application in these cases need not be more than a few days; for as soon as healthy granulation commences, the apparatus may be removed, and cicitrization rapidly succeeds.

11. In several cases normal innervation has been restored in paralysed parts under the use of this apparatus, the zinc being placed superiorly, and the silver inferiorly, so as to include as nearly as possible, the whole of the paralysed part. Disordered function of particular nerves has been also remedied by so placing the two plates that the nerve lies between them.

12. The action of the zinc plate is an excellent substitute for the common moxa, and for the caustic potass when obliteration of a vein is denied. In some cases of varicose ulcer, while the silver plate has been used to hasten cicatrization, an eschar has been purposely formed by the zinc over the dilated vein above, in order to obtain a radical cure; and these objects have been readily effected.

In conclusion, I would observe, that I think further experiments with this apparatus are required; and, as opportunity offers, I intend to institute a series of observations to determine whether a second denuded surface be absolutely required—how the results would differ if one of the plates were applied to the cuticle moistened with water or acid, and how alteration in the relative position of the plates would affect the results of their application. Dr. Cogevina's cases convince me that the inferences I have drawn from them are *generally* correct; but I still consider more experience required to establish their *universal* truth.

I will only add, that I think this by far the best general method of applying electricity in the treatment of disease. The apparatus is cheap, simple, and portable: it operates without causing pain or uneasiness to the patient, nothing more than slight itching or numbness being felt; its action is to a certain extent regular and uniform, slow, and without violence, in all respects affording a much better imitation of the natural currents of vital electricity than the batteries in common use, as the action of the latter is powerful, and only susceptible of temporary application.

Medical Gazette May 26, 1848, p. 896.

174.—NEW KIND OF STRAIGHT-JACKET.

Influenced by the conscientious conviction that to treat certain desperate and intractable cases of insanity by the use of mechanical restraint, and to apply it also to lunatics when they suffer from grave bodily disease, requiring the horizontal position, and as little expenditure of muscular power as possible, is most wise and most humane,—we now suggest a new means of restraint, which we have found of easy application, little irksome to the patient, and secure when applied. The object to be attained, is to prevent flexion of the fore-arms; and we attain this end by making the sleeves of a jacket or bedgown of stout leather. When this is applied, the arms remain extended, but there is perfect freedom of motion at the shoulder joint, and the body itself is unembarrassed by any means of constraint whatever. The cylinders of leather forming the sleeves of the restraint dress are large and roomy, and exert no pressure whatever upon any part. It is obvious that, with such a dress on, a patient may be allowed liberty to roam about, and yet be incapable of doing violence to himself or others. Although there is freedom of motion at the shoulder-joints, persons prone to suicide could not reach the head and neck, owing to the want of flexion at the elbow: violence to others is prevented at the same time, seeing that little force can be exerted with an extended fore-arm.—*Dublin. Quar. Jour.*

Medical Gazette, May 19, 1848, *p.* 841.

175.—THE NEW ADHESIVE FLUID.

Within these few weeks an ethereal solution of gun-cotton, invented by Mr. John P. Maynard, has been introduced in the United States as a substitute for common adhesive plaster, plaster cloth, bandages, and sutures. The fluid, exposed to the atmosphere, in a few seconds becomes a solid gum, adhering to the skin with such tenacity as to render any displacement of the dressing formed by it almost impossible. It resists the action of water, hot or cold, and is unaffected by any degree of warmth—conditions most necessary where immediate union of a wound is desired. It almost instantly forms an unirritating coating or plaster, of great strength and durability. In contracting, it brings the edges of the wound very firmly together, and being impervious to air and water, enables them to unite rapidly by the first intention. It leaves hardly a perceptible scar. It affords protection to all excoriated surfaces. One manufacturer of the fluid styles it *collodion*. He represents leech-bites, incised wounds, cuts, burns, excoriations, chilblains, and sore nipples, as readily cured by dressing with the fluid. The price is said to be very moderate.

Medical Gazette, May 12, 1848, *p.* 826.

176.—GUNSHOT WOUNDS.

[The following abstract of the modes of practice adopted by MM. Jobert and Baudens, opposed as they are in almost every particular, is given in the Monthly Journal, by Dr. E. Waters.]

In all gunshot wounds M. Jobert adopts a uniform and exclusive mode of practice: he deprecates all interference with the wound in every instance even in cases of comminuted fracture. He not only condemns the extraction of splinters of whatever kind, and leaves their discharge entirely to nature, but interdicts formally all examination of the wound. He combats local inflammatory symptoms by antiphlogistic measures, and, when the tension becomes excessive, relieves it by two longitudinal incisions, from three to five inches long, and penetrating through the skin and cellular tissue, practised on each side of the orifices at a distance of about two inches; he invariably avoids dilatation of the wound itself. He justifies this treatment by the advantage obtained in preventing the access of air to the fracture, with which that obtained from the extraction of the fragments cannot, he contends, be compared. He further maintains, that direct benefit is obtained from the presence of the fragments—from those even that are completely detached—in that they contribute to the consolidation of the fracture, and prevent the formation of false joints; and he believes that in many instances useful limbs may be thus saved which would otherwise be sacrificed. The patient, it is admitted, may occasionally suffer for a time from the presence of the necrosed portions; but that these are gradually eliminated, and the limb ultimately regains its original power. In other instances, in accordance with his views in respect to the lodgment of balls in bones, he maintains that the necrosed portions may occupy the callus, and remain for an indefinite period without giving rise to any annoyance. To support the correctness of these views, he adduces the following cases: —in one of these the patient was wounded in February. The humerus was fractured comminutively near its head; the ball passed out; no dilatation nor extraction of fragments was practised, but some portions of bone were removed during the suppuration. An enormous mass of callus is developed around the seat of fracture, and consolidation has taken place. The callus incloses portions of dead bone, and a fistulous opening on the outer surface of the arm communicates with the seat of fracture. The patient retains the use of his hand, but is unable to raise or support the weight of his arm, which he carries in a sling; he suffers but little, and his health is good. The remaining patient had the humerus fractured by a musket-ball at the upper third, during the days of June; no examination of the wound nor extraction of fragments was practised. Consolidation of the fracture is now complete, and the wound perfectly healed. The only deformity of the arm is occasioned by the exuberance of the provisional callus, which is believed to contain necrosed portions of bone. The patient continues to support his arm in a sling.

M. Jobert attaches great importance to these cases, regards the results as among the finest ever obtained in surgery, and as fully justifying him in not extracting fragments of any description.

M. Baudens pursues an entirely opposite treatment. In all cases of fracture caused by gunshot wounds, his first care is to ascertain the nature of the parts by direct examination; and if the existence of splinters be established, and there be any hope of saving a useful limb, he immediately places the patient under the influence of chloroform, practises the necessary dilatation, and extracts all the fragments of bone, whether primary or secondary; his object in this being to convert, as nearly as may be, these formidable wounds into simple ones.

The first authorities, among whom Dupuytren may be cited, have always ascribed the local accidents attendant on these fractures to the presence of the splinters, which, acting as foreign bodies, light up and aggravate inflammation. In several cases, M. Baudens, guided by the character of the local symptoms, the tension and discolouration of the skin, inflammation in short putting on phlegmonous appearance, assumed the presence of splinters, and confirmed his diagnosis by forthwith administering chloroform to the patient and extracting them; in such cases he then with a razor practised long superficial incisions, not embracing the whole thickness of the skin, in order to relieve the engorgement, and applied ice to diminish the action.

It is thus shown that M. Baudens extracts all foreign substances, and that he not only removes the primitive or detached fragments, but also the secondary, or those still connected with the soft parts. Till lately no difference of opinion existed as to the propriety of this practice in the first class; but with regard to the second the case was different. Dupuytren, who advocated the immediate removal of the first, inculcated in his lectures, that in the greater number of cases the second were not to be extracted, unless when the operation could be performed without danger of hemorrhage or severe pain, and then only when the fragments had been more or less detached by suppuration; that is to say, at the termination of a variable period, eight, ten, fifteen, twenty days, a month, or even later. M. Baudens removes them at once, and his long experience in Africa gives great weight to his opinions.

Two objections only are urged by Dupuytren against the latter mode of proceeding; one is the severity of the pain attendant on the operation, and he has recorded a case where he was forced to desist from researches which he had commenced, owing to the sufferings of the patient. The anæsthetic properties of chloroform completely overrule this objection: it is only necessary to witness its employment in these cases, to acknowledge unhesitatingly its beneficial effects.

The remaining objection, that, namely, of the danger of hemorrhage, alone therefore demands consideration. This danger, as resulting from the extraction of the splinters, seems to be more apparent than real. In reference exclusively to fractures of the extremities, it is difficult to conceive any grounds for dread in this respect, where amputation would not be directly indicated; were it required, however, to proceed to their extraction in comminuted fractures of the thigh, the depth of the parts might seriously complicate and impede the operation. On the other hand, cases exist where the presence of the fragments seems to have been the cause of hemorrhage.

Monthly Journal, Oct., 1848, *p.* 256.

177.—ON SEVERE COLD OR CONGELATION AS A REMEDY OF DISEASE.—

By James Arnott, Esq., M.D., Brighton.

Many powerful physical agents which are destructive when they act in an uncontrolled manner on the human body, become remedial when they are regulated and applied under appropriate circumstances. Excessive heat may be so limited or controlled, even when it is of so high a degree as to render iron white, as to furnish an useful therapeutical means; and the opposite extreme of temperature, or a degree of cold causing congelation of the animal textures, which has hitherto been only regarded as the cause of disease, constitutes, when it is not too low, too extensive, or too much prolonged, a remedy of great importance, and of very general application.

Intense cold or congelation would probably, long ere now, have obtained a place amongst the more potent therapeutical means, but for a mistaken notion respecting its effects on the animal structure. It has always been dreaded as a cause either of violent reaction and inflammation, or, if longer continued, of the immediate gangrene or death of the part subjected to it; and the common accidents from intense frost in severe winters and high latitudes, have appeared to justify this apprehension. But although it is perfectly true that the body thus exposed to intense cold may suffer as severely as when it is exposed to intense heat, or is burned by accidental fires, yet when severe cold is regulated as has been just described, it becomes an agent of a very different character, producing neither reaction nor mortification. When limited in degree, duration, and extent, it exerts an anti-inflammatory power; it appears to depress the vascular and nervous energies permanently, and yet within the bounds of safety; and, probably, while it depresses, it considerably modifies the vital actions. When severe cold has been used to remove the sensibility of parts previously to surgical operations, the wound has appeared, in every instance, to heal more speedily than under the usual circumstances.

As it is only my wish, at present, to establish the right of congelation to be admitted amongst our principal remedies, I will not enter into details respecting the diseases in which I have had recourse to it. If the above explanation of its action be correct, it is obviously applicable to a great number of the most formidable maladies to which the human frame is subject. As respects its anæsthetic action on the nerves, it exerts a most beneficial influence in many painful diseases, the seat of which can be reached by it, as tic, cancer, &c.; but it is probably as a preventive after wounds, burns, &c., and a prompt remedy of vascular excitement and inflammation, as inflammation of the brain, windpipe, large intestine, &c., and of various hemorrhages, that it will be chiefly valued. Cold has already a high character as a remedy of inflammation; but a continuous low temperature, such as has hitherto been employed (or, rather, which it has been the endeavour to employ), may only repress the morbid energy, which a short application of a much greater degree of cold may altogether and at once destroy. A class of diseases in which both nerves and blood-vessels are in a morbid condition, are affections of the skin, and these were, naturally, from being so obviously under the influence of the new remedy, amongst the first in which it was used. The most obstinate cutaneous diseases, erysipelas, and other acute affections as well, have yielded to congelation so speedily as almost, with respect at least to some of them, to suggest another explanation of its modus operandi. Had the cases of prurigo so treated been dependent, like scabies, upon the presence of parasitic animals, their speedy and permanent cure would be easily explained by the sudden extinction of the life of these animals by the cold. A most distressing attack of prurigo pudendi was completely subdued by two congelations, each of about thirty seconds duration, after a prussic acid lotion, and other routine applications, had been tried in vain.

Congelation to the degree which has been specified, may be produced by the common frigorific mixture of ice and salt; though for particular purposes, one of greater power might be prepared. The easiest mode of using the frigorific is, to dip a piece of ice into salt, and then apply it closely to the part. Congelation will be thus produced in half a minute. The ice may be made of suitable form by a hot iron, and may be dipped in a mixture of salt and nitrate of ammonia. When the surface to be frozen is irregular, a little pounded ice and salt may be placed on a rag, or on a flat bit of sponge; or the mixture may be confined to the part by a deep ring or bottomless cup, made of gutta percha or bees' wax, or by means of a thin bladder, each being provided with a small tube to carry off the warmer brine as the ice dissolves, or a thin gauze bag, with a sponge to imbibe the escaping brine. I have thus frozen the whole anterior part of the thigh. The application of ice or very cold water to the skin is painful, but the severer cold of a frigorific mixture immediately benumbs the part. It has been applied to a carious tooth, there being free access to the nerve of the tooth, an inflamed and ulcerated mouth from mercurial ptyalism, and an irritable ulcer, without causing pain; but when the congelation commences, there is for a few seconds, an uneasy sensation of contraction, proportionate to its degree. Irritable ulcers have thus been soon converted into healing sores. In the case of ptyalism referred to (a patient of the Brighton Dispensary, who had been deprived of sleep for two nights by the affection of the mouth), there was no return of pain, except in mastication, after one application of the frigorific, which was sufficiently powerful to blanch the lower lip as it flowed over it, the inflammation being thus subdued.

As the prevalent erroneous notion that congelation of the animal textures must in every instance produce either violent reaction or gangrene, will probably prove some impediment to the reception of this important therapeutic agent, it may be well to direct the attention of such as would object to it on this account, to the vast difference between intense cold acting for a long period on the extreme parts of the body where the circulation of blood is never vigorous, and cold applied for a very short period to parts surrounded by, or overlaying other parts, where the circulation is vigorous, and ready to re-animate the portion in which it has ceased. There is as great a difference between the cases as would exists between that of opium taken in unlimited quantity by a feeble child, and when taken in a suitable dose by an adult. I have now employed congelation nearly two hundred times, exclusive of experiments on animals,* for anæsthetic and remedial purposes, without its being followed, in a single instance, by any injurious effect. Even if the congelation be kept up for several minutes, there is no worse consequence than a slight congestion, with redness, of a few days' continuance.

As respects the employment of severe cold for the production of local anæsthesia, it may be remarked that, although a fatal result now and then from the use of chloroform may not be thought a sufficient objection to its use, and although the intoxication or loss of consciousness during its action may be only deemed a slight inconvenience, still the facilitating of the healing process, by the prevention of an injurious degree of inflammation, ought, I think, to entitle the application of cold to a preference in the great majority of surgical operations. The smallest operations, as issues, setons, ligatures, bleeding, will illustrate the anæsthetic action of cold.

Medical Gazette, Dec. 1, 1848.

178.—NEW PREPARATION OF CAMPHOR WITH CHLOROFORM.—By Messrs T. & H. Smith, Chemists, Edinburgh.

[Messrs. Smith state that by using the following formula, camphor may be exhibited in the largest doses required, in a state of perfect solution.]

The formula is as follows:—Three drachms of solid camphor are dissolved in one fluid drachm of chloroform. This is, perhaps, one of the most remarkable cases of solution the whole range of chemistry presents to us. The solution is most *rapid and complete*, and the bulk of the liquid is now increased from one to fully four fluid drachms. This solution, rubbed up with the *yelk* of one fresh egg, may be formed into an extremely elegant emulsion by the addition of water, without the slightest separation of the camphor or chloroform; in fact, no separation of any kind takes place. If to the proportions given above as much water be added as to make a four-ounce mixture, each teaspoonful of the mixture when formed will contain about five and a half grains of camphor, and about two minims of chloroform. The capability of the formula being varied so that either the camphor or chloroform may constitute the predominating ingredient, must be quite obvious. This mixture can be administered in any ordinary vehicle, such as water, without the occurrence of any separation; indeed, the mixture is as readily and completely effected as cream with tea or coffee. We have tried the effect of several medicinal substances on the mixture. With none of them has any separation been caused.

A weak saline solution, composed of common salt, phosphate of soda, and an alkaline carbonate, mixed readily, as well as a solution of muriate of morphia and sulphate of zinc. With the volatile alkali, and acid liquids —such as a weak solution of acetic and muriatic acids—the mixture seems to become more intimate and stable. The mixture with ammonia has stood since its preparation—now fully a week—without any separation. With water alone, however, the chloroform solution of camphor separates in a few days, but they readily unite again when slightly agitated. The solution of camphor in chloroform, although insoluble in water alone, appears in this mixture to be in as complete a state of mixture as the butter in milk when newly drawn from the cow. *Monthly Journal, Nov.* 1848, *p.* 308.

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* I often take a bit of ice wrapped in flannel or sponge to the Dispensary, and apply it to several cases in the course of the morning.

179.—ON A SOLUTION OF IODINE IN OIL.—By M. Marchal.

This preparation has superseded the other forms of iodine at the Val-de-Grace. M. Marchal, believing that cod-liver oil owes its virtues to the small quantity of iodine which it contains, concluded that a more effective preparation of this substance than the iodide of potassium is found to be, might be made by combining it with an organic body; in which state the drug would probably be longer retained in the economy. He selected an oily body, in the hope that the oil, by forming an emulsion with the bile, would allow of the substance being digested in the small intestines, and enable the stomach to become relieved of its presence. In this way, large doses of iodine can be administered, if requisite, without irritating the latter organ; while the iodine is eliminated by the urine much more slowly than is the case with the iodide. At the same time, its absorption is made certain by the fact of its not being detected in the fæces. The iodine is dissolved in fresh almond oil as wanted, in the proportion of one part to fifteen, and of this an emulsion is made with gum tragacanth and the milk of almonds. The minimum dose is one grain, gradually increased to six grains. M. Marchal has used it extensively in the treatment of buboes and other glandular enlargements, with the best effects, in promoting and hastening their cure; M. Ricord also adds his testimony in favour of this pre paration.—*Gazette des Hospitaux*, 1848. *Monthly Journal, Aug.* 1848, *p.* 183.

SYNOPSIS,

CONTAINING A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOREGOING PAGES OF THIS VOLUME; AND SHOWING, AT A GLANCE, THE MOST IMPORTANT INDICATIONS OF TREATMENT PUBLISHED BY DIFFERENT WRITERS WITHIN THE LAST HALF-YEAR. (ARRANGED ALPHABETICALLY.)

DISEASES AFFECTING THE SYSTEM GENERALLY.

Anasarca.—At an early period, make four or five deep incisions, a third of an inch in length, down to the fascia, in each leg: and keep the patient in an arm-chair near the fire, with the legs naked, and resting on cloths. When all the serum has drained away, support the legs by a roller. (M. Lombard, p. 51.)

Disease Generally.—It is found that the kidneys can depurate the blood, not only of matters generally regarded as proper to their function, but of substances usually separated by other emunctories; in fact, they remove all soluble noxious matter. When, therefore, disease is excited or aggravated by noxious or lethal effete matter in the blood, we should endeavour to procure the decomposition and elimination of this matter, by stimulating the depurating functions of the kidneys. And this may be accomplished by the exhibition of the alkalies, and their carbonates, citrates, acetates, and tartrates, which not only stimulate the kidneys, as do the vegetable diuretics, but also increase the metamorphoses of tissue going on in the capillary system. (Dr. Golding Bird, p. 57.)

Fever, *Continued*.—When the cerebral affection in the course of continued fever is attended by a quick and feeble pulse, great restlessness, total want of sleep, subsultus, and much disturbance of the nervous system generally, Dr. Graves's plan of treatment is highly valuable. It consists in giving tartar emetic with opium, the formula being, tartar emetic, four grains; tincture of opium, half a drachm to a drachm; camphor mixture, eight ounces; half an ounce or an ounce to be given every two hours. (Mr. G. Todd, p. 28.)

Of Children.—During the first week the treatment is chiefly expectant; consisting in the use of the tepid bath at 90° or 92° every morning, and tepid sponging several times a day; light aliment; simple salines, such as the citrate of potash, with a little ipecacuanha wine if there is troublesome cough; and a little castor oil if the bowels are confined. If there is a disposition to diarrhœa, give equal parts of Dover's powder and hydrarg. c. creta, once or twice a day. Ascertain every day whether there is abdominal pain and tenderness; if it exists, and is not relieved by the application of linseed meal or bran poultices, the application of a few leeches may be needed. Local depletion may also be needed, for symptoms of cerebral disturbance, if there is great heat and flushing, and noisy delirium; as also if there is much moaning, restlessness, and headache. But if the delirium occurs only at night, and is of a tranquil kind, it will suffice to apply cold to the head, and to keep the apartment cool and quiet. During the second and third weeks, nutritious food will be required, and should consist in broth and beef tea; or if there is diarrhœa, arrow-root, milk, and isinglass. Wine may even be needed: and the following form of stimulant will generally be found useful. For a child of five years old, it is four minims of dilute hydrochloric acid, eight of compound spirit of sulphuric ether, and three drachms of camphor mixture, every six hours: a small dose of Dover's powder, as a grain or a grain and a half should also be given at bedtime, to prevent diarrhœa and procure sleep. If there are severe abdominal symptoms, the acid mixture must, of course, not be given. (Dr. C. West, p. 32.)

Intermittent.—In using quinine as a remedy for the West India intermittent or remittent fever, it should be given till its specific effect on the system, termed by the author "cinchonism," and marked by the supervention of more or less deafness and ringing in the ears, is produced. The best way to saturate the system with the remedy, against the paroxysms of intermittent, is to give hourly doses of three grains, till twelve doses have been taken; or if the disease is a quotidian with short intermission, six grains hourly, until six doses have been taken. One of the most valuable applications of quinine is against relapses of intermittent fever. For this purpose, two days before the anticipated relapse, give three grains of quinine thrice daily for four days: repeat the treatment at the time of the next anticipated relapse, and so on for three or four times successively; when by thus baffling the relapse, the disease will be entirely eradicated. (Dr. D. Blair, p. 26.)

Scarlatina.—In some epidemics of malignant scarlatina, the state of the fauces is identical with what occurs in epidemic diphtherite. In these cases, begin early in the disease before ulceration commences, to give one or two grains of calomel every four hours; and apply a solution of nitrate of silver, a scruple to the ounce, twice or thrice a day, to all the affected parts. Internally give acetate of ammonia, or, in the later stages, quinine with sulphuric acid. (Dr. J. M. Coley, p. 34.)

GOUT.—An attack of gout is invariably dependent upon impaired function of the liver, and is certain to be relieved by a copious evacuation of bile. The best way to secure this end, is to give one of the following pills every four hours: ℞. Hydr. chlorid., ext. colch. acet., ext. aloes purif., aa. gr. j.; pulv. ipecac. gr. ij. M. fit. pil. After two or three of these pills have been taken, assist their action by giving a dose or two of the compound decoction of aloes. By this time the paroxysm will have been relieved; and the pills may then be given at longer intervals for a little time longer. (Mr. A. White, p. 44.)

Acute.—In acute gout, begin with a purgative, consisting of from ten to twenty grains of jalap, and from three to eight of calomel, followed by a draught consisting of infusion of rhubarb and senna, with a drachm of the sulphate of potash and a scruple of the carbonate. After that let the patient eat little or nothing for twenty-four hours, and give a diaphoretic drink with ipecacuanha wine, or acetate of ammonia; and at night give a full dose of Dover's powder. On the third day begin with colchicum, giving from twenty to sixty drops of the wine twice a day, in four or six ounces of distilled water, along with five or ten grains of nitrate of potash, two drachms of compound spirit of juniper, and half a drachm of spirit of nitric ether.

Chronic.—In chronic gout, alteratives, directed to the biliary and digestive organs, are needed: opiates may be given more freely: and more stimulating diaphoretics, such guaicum, may be used. Otherwise the treatment differs from that for acute gout, only in being less active. Veratrine may be advantageously used, externally in the form of pomade, with four grains of veratine to an ounce of lard, applied to the affected part; and internally, in doses of one-twelfth to one-eighth of a grain, dissolved in distilled water, twice or thrice a day.

Metastatic. Metastatic gout must be treated by the application of sinapisms, blisters, hot pediluvia, and stimulant frictions, to recall the disease to the extremities. While the feet are plunged into hot water with mustard in it, if the stomach is attacked, we must give cold or iced drinks with opium; if the head is the seat of metastasis, we must apply cold lotions to it; while if the heart is affected, we should apply no means but the counter-irritation, and above all take care not give hydrocyanic acid. (Dr. Robert Dick, p. 47.)

Rheumatism.—*Acute.*—The indications are to relieve pain, to promote the action of the skin, kidneys, and bowels, to use antacids, and to give large quantities of diluent fluids. For these purposes, give a grain of opium, a grain of ipecacuanha, and five grains of nitre, every two, three, or four hours; and a mixture with sulphate and carbonate of magnesia. Envelope the joints in a large quantity of cotton wool, and cover with oiled silk; changing it every twelve or twenty-four hours. Give plenty of simple diluents, and from the first, let the patient have a little good beef tea frequently through the day. And when the patient begins to pass pale urine, with or without pale lithates, he will be the better for generous diet, with wine, ammonia, or quinine, even though the articular affection persists. Too much sweating, too much purging, or too much opium, are equally unadvisable. If the patient cannot bear opium, extract of hyoscyamus, hop or lettuce may be substituted. If the state of the joints does not yield to the application of cotton wool, apply a small sinapism for half an hour to redden the skin, then wash and dry the skin, and apply a blister the size of a crown-piece; the blistered surface may be allowed to heal, or may be dressed with stimulating ointment; or a succession of small blisters may be used. Watch the state of the heart from the first; and on the first indication of pericardial or endocardial affection, apply a large sinapism over the region of the heart, and when it comes off, a large blister: but *do not bleed* either locally or generally. Give calomel and opium to to affect the gums; and, if needed, rub in mercurial ointment, or use it to dress the blistered surface. When delirium, resembling delirium-tremens, occurs as a complication of rheumatic cardiac affections, it is "a signal of distress," and must be responded to by an immediate alteration in the treatment. All too free evacuations, whether from the skin or bowels, must be checked; nourishment must be given frequently in small quantities; and even wine, brandy, or porter, may be administered. If the patient is wakeful, give opium. And take care that all exertion is avoided, lest fatal syncope be induced. If, however, there is a coma, do not give opium, but apply sinapisms or blisters (Dr. R. B. Todd, p. 36.)

Chronic Gonorrhœal.—Introduce a bougie into the urethra, twice or thrice a week, in addition to the usual treatment. (Mr. G. Corfe, p. 103.)

Scrofula.—In addition to the usual hygienic treatment, give small doses of the *purest sulphur*, which has the effect of accelerating the capillary circulation, and restoring the defective animal heat. The following formula may be used:—℞. Sulphur. purif. gr. v. ad x.; syrup simp. ʒi.; aquæ ℥vij.; bene terendo ft. haust. To be taken once or twice a day in a tumbler-full of new milk. A slight chalybeate may sometimes be advantageously added. (Mr. F. A. Bulley, p. 152.)

AFFECTIONS OF THE NERVOUS SYSTEM.

Apoplexy.—When what are called "threatenings of apoplexy" occur, corresponding to what Dr. Hall terms "paroxysmal apoplexy"—in the actual attack, bleed instantly, and give an effectual emetic, enema, and purgative. Afterwards let the diet be more carefully regulated, any discoverable source of irritation removed, business entirely suspended, and all emotion avoided. "The remedy of remedies is travelling." (Dr. M. Hall, p. 92.)

When apoplectic symptoms arise from disorder of the liver, give a full purgative, consisting of ten grains of calomel and the same quantity of extract of colocynth; and repeat the colocynth in smaller doses, followed by a cathartic draught, three or four times a week. (Mr. Corfe, p. 97.)

Delirium Tremens.—Let chloroform be inhaled. (Mr. S. L. Gill, p. 102.)

Hydrophobia.—The patient dies from repeated excitation of reflex action, wearing out as it were the power of the spinal centres; and from asphyxia, induced by repeated paroxysmal closure of the larynx. Tracheotomy is therefore to be performed, in order to prevent asphyxia; and the patient is then to be placed on a spring bed, and surrounded by ranges of curtains of lace or net, and every current of air, every shake of the bed or the floor, in a word, every excitation, or cause of reflex action or emotion, absolutely avoided. (Dr. M. Hall, p. 98.)

Let repose be procured by inhalation of chloroform, once or twice a day; and apply counter-irritation to the head and spine, and give active purgatives. (Mr. R. Y. Ackerley, p. 99.)

Neuralgia.—Use active and prolonged bodily exercise. (p. 104.)

Paralysis.—*Cerebral.*—It is important to notice the state of the muscles of a paralysed limb; for if rigidity of the muscles exists at an early period, local depletion and counter-irritation will be attended with benefit, whereas such measures are not applicable when complete relaxation exists. (Dr. R. B. Todd, p. 80.)

From Lead.—Prevent the further introduction of the poison by cleanliness and frequent washings; stimulate the skin by friction and exercise; give baths containing sulphuret of potassium, in the proportion of one, two, or three ounces, to as many gallons of water; let the patient have good food, and breathe pure air; and apply galvanism as a local stimulant, for ten or fifteen minutes at a time, three times a day. (Dr. R. B. Todd, p. 88.)

Of the Portio Dura.—If arising from otitis, antiphlogistic treatment is needed, and sometimes even salivation will be beneficial. But if arising from cold, or constitutional causes, much treatment will not be required, beyond the application of warm fomentations, and the exhibition of mild purgatives, or diaphoretics, alkalies, or iodide of potassium; leeches and blisters are not so useful, and strychnine should not be given at all. (Dr. R. B. Todd, p. 83.)

Sciatica.—In obstinate chronic sciatica, introduce a bougie into the urethra, twice or thrice a week. (Mr. G. Corfe, p. 103.)

Tetanus.—Though opium does not fulfil the indication of diminishing the excitability of the spinal cord, yet in the present state of our knowledge, we are not justified in discarding it. Our principal object, in the treatment of tetanus, should be to support the patient's strength. Operations in traumatic cases are not only unnecessary but injurious. (Mr. S. G. Wilmot, p. 100.)

Traumatic.—Let chloroform be inhaled, give calomel purgatives, and use counter-irritation. (Mr. R. L. Baker, p. 100.)

Let ether be inhaled; and give morphia or opium, and croton oil purgatives. (Mr. J. G. Lansdown, p. 101.)

Toothache.—Having dissolved some gum copal in chloroform, clean out the hole, moisten a little cotton with the solution, and introduce it into the decayed part. (Mr. J. Beatson, p. 105.)

If there is free access to the nerve of the carious tooth, apply a bit of ice, or a little frigorific mixture. (Dr. J. Arnott, p. 342.)

AFFECTIONS OF THE ALIMENTARY CANAL.

Anus.—*Fissure of.*—Depends on spasms of the sphincter, and is to be treated by introducing one finger after another into the rectum, until the whole hand is introduced, and drawing the closed fist back through the anus. (M. Maisonneuve, p. 195.)

Aphtha.—After every time of feeding, take care to remove from the mouth all remains of the food, by wiping it carefully with a piece of soft rag dipped in warm water. In very mild cases, this will be sufficient to effect a cure, especially if a solution of borax, ℈i. or ʒss. in ℥i. of water, is applied after every time the mouth is thus cleansed. If this is not sufficient, let a solution of nitrate of silver, five grains to the ounce, be applied twice a day, in addition to the use of the borax. (Dr. C. West, p. 111.)

Constipation.—The addition of nux vomica to purgative medicines, very sensibly increases their efficiency. Thus a pill composed of a grain of Barbadoes aloes, three-quarters of a grain of extract of rhubarb, and half a grain of alcoholic extract of nux vomica, (Phar. Edin.) if taken at bedtime, will produce one or two full evacuations the next morning. (Mr. C. Boult, p. 116.)

Dysentery.—Injections containing two grains of nitrate of silver in an ounce and a half of thin mucilage, and a few drops of laudanum, are very valuable, conjoined with other treatment, in the early stages of dysentery, before ulceration has taken place. (Mr. W. Garlike, p. 123.)

Chronic.—Decoction of logwood, with laudanum, is the best astringent that can be given. When there are profuse discharges without pain, enemata of sulphate of alum with laudanum, produce a very good effect. (Dr. D. Donovan, p. 124.)

Diarrhœa.—The presence or absence of bile in the stools, determines a very important point in the treatment. If the evacuations are bilious, opium is not only borne, but needed; if there is a deficiency of bile, opium will be injurious.

Chronic.—In chronic diarrhœa, with whitish stools, and general relaxation of the system, strychnine, is an admirable remedy, rendering the stools consistent, fæculent, and bilious. (Dr. J. F. Duncan, p. 117.)

Give one-twelfth of a grain of muriate of barytes, and one-fourth of a grain of muriate of morphia, made into a pill, thrice a day. (Dr. A. Walsh, p. 119.)

Almost all cases of chronic diarrhœa (except the diarrhœa of phthisis, or that caused by ulceration) may be cured by persesquinitrate of iron. The ordinary dose is from fifteen to thirty drops of a solution prepared according to the formula at p. 121 of this volume, thrice a day; but in some cases, we may begin with five drops, and gradually increase the quantity. (Dr. Graves, Dr. Neligan, Mr. W. Kerr, p. 119.)

Of Phthisis.—Give five grains of trisnitrate of bismuth, with a little magnesia and gum arabic, three or four times a day. (Dr. Theophilus Thompson, p. 110.

FISTULA *in Ano.*—Divide the sphincter ani completely; there is then no necessity for opening the sinus more extensively, whether it extend upwards by the side of the gut, or outwards into the gluteal region. When the hemorrhoidal vessels are abnormally enlarged, divide the sphincter by means of a ligature, instead of using the knife. (Mr. B. Cooper, p. 197.)

Recto-Vaginal.—Divide the sphincter ani, (but without laying open the fistula), and pass a probe coated with potassa fusa through the sinus, or bring the edges together with a ligature. (Mr. B. Cooper, p. 198.)

GASTRODYNIA.—If arising from *acidity*, of course antacids must be given, carbonate of potash first, and this failing, carbonate of magnesia. If the symptoms indicate a *sub-inflammatory congestion* of the gastric mucous membrane, give neutral salts with the infusion of senna, if the patient is young and plethoric; if, however, he is past the middle age, and of gouty or rheumatic diathesis, do not give neutral salts, but give extract of rhubarb and blue pill, with or without extract of colchicum, followed by infusion of senna and rhubarb, with tincture of cardamoms. If the disorder arises from *ingurgitation of bile*, begin with an emetic, and then give taraxacum, to which sulphate of magnesia may be added, if the stools are pale and inefficient. If the cause is *flatulence*, give a mixture containing four or six drachms of sp. ammon. co. and tinct. assafœt. with six or eight ounces of inf. sennæ co. If *interruption of the menses* or *suppressed hemorrhoids* lead to the gastric pain, leeches to the anus or groins, hot pediluvia, and moderate purging, are the proper remedies. And if the gastrodynia appears to be *simply neuralgic*, without appreciable cause, some of the various sedatives, narcotics, and tonics, mineral and vegetable, must be used, according to the temperament, age, and sex of the patient. (Dr. R. Dick, p. 114.)

HARELIP.—When there is a cleft maxilla, and one of the edges of the divided alveolus projects, detach the soft parts from the bones more extensively than is usually done, and then cut through the protruding alveolus with the bone forceps, at the spot about corresponding to the space between the first and second incisors, and bend back the partially detached portion to the desired level; then finish the operation in the usual manner. This operation should be performed before dentition, and may be safely done as soon as the child is a month old. (Mr. H. H. Walton, p. 169.)

In operations on the lips, employ a large pair of Deiffenbach's forceps, on each side, to control the hemorrhage, instead of having the lips compressed by the fingers of an assistant. In bringing together the edges of the incision, use thin steel pins; and instead of thin ligatures, use strips of "endless" lint, about half an inch wide to twist about the pin. (Mr. T. Paget, p. 170.)

The best time for operating, is soon after the child is weaned. (Mr. B. Cooper, p. 171.)

HEMORRHOIDS.—Attend first to the functions of the liver and bowels by giving small doses of mercury, and mild purgatives, such as confec. piper. nigr., or "Ward's paste." Or give the following draught thrice a day; ℞. Dec. aloes co. ʒiss.; ext. sarzæ ʒss.; decoc. sarzæ co. ℥ss. M.; with an alterative pill two hours before dinner, to induce defæcation at bedtime. If there is very great irritation excited by the piles, give one of the following pills twice or thrice a day; ℞. Morph. acet. gr. 1-6th; ext. hyosc. gr. iss.; camphoræ, gr. ij.; ext. coloc. co. gr. ij. M. When surgical treatment is required, internal piles must always be removed by ligature. Pass a needle armed with a double silk, through the centre of the tumour, and tie the threads on opposite sides, taking care that they include only the mucous membrane and sub-mucous cellular tissue; and after tying the ligatures, lay the tumour open with the knife to relieve the constriction. After the operation, keep the patient recumbent, on low diet, and give opium to keep the bowels constipated till the ligature comes away. If the piles are *external*, remove them by excision; and if there are more than one, remove them all at the same sitting. During the progress of cicatrization, pass a bougie daily, to prevent contraction of the anus. (Mr. B. Cooper, p. 194.)

Internal.—Apply the *strongest* nitric acid that can be procured, to the mucous membrane covering the tumour, so as completely to destroy its vitality. Or, remove the tumours with a pair of curved scissors, having previously encircled them at the base with an instrument which will at the same time hold them in their situation, and prevent the divided vessels from bleeding. Immediately on removing the tumour, wipe the cut surface dry, and touch it with the strong nitric acid. (Mr. H. Lee, p. 188.)

Hernia.—For inguinal hernia in children, (and in an emergency for adults) use instead of a truss, a skein of Berlin or lamb's wool: this is to encircle the pelvis, one end being passed through the other, at a point corresponding with the inguinal ring, and the free end then carried between the thighs and fastened behind to that portion which forms the cincture.—(Mr. W. Coates, p. 187.)

For oblique inguinal hernia, use the "Solid-pad truss." (Mr. G. R. Dartnell, p. 187.)

Irreducible.—In order to get the hernia into a reducible form, keep the patient in bed with the shoulders and thighs raised, and ice applied frequently to the tumour. Order low diet, purgatives, and enemata; and give a grain of blue pill and a quarter of a grain of tartarized antimony twice a day, with a view of getting the fatty matter of the omentum absorbed. (Mr. B. Cooper, 178.)

Strangulated.—If the taxis does not succeed, and the patient objects to have the operation performed, give opium to the extent of three or four grains. If the operation is performed, divide the stricture, if the circumstances of the case will allow, external to the sac. (Mr. B. Cooper, p. 178.)

If the taxis is carefully and patiently applied, with the aid, occasionally, of the warm bath, the operation will rarely if ever be required. (Dr. J. Toogood, p. 183.)

Strangulated Femoral.—Mr. Gay's operation is by far the simplest and the safest. (Dr. A. Catherwood, p. 186.)

Umbilical.—For exomphalos in children, apply pressure, by means of a piece of vulcanized caoutchouc, of the thickness of half-a-crown, and long enough to reach one-third round the child's body, to the ends of which are attached pieces of white linen web to complete the circle, with tapes to tie behind the back. (Mr. W. N. Spong, p. 186.)

Ileus.—The abdominal cavity should certainly be only opened as a last resource. When an exploration is determined on, it should be performed in the linea alba except the obstruction is in the large intestine, when an artificial anus must be formed in the lumbar region. (Mr. B. Cooper, p. 185.)

Intestines, *Wounds of.*—When there are symptoms of wounded intestine without protrusion, the treatment consists in rest, and abstinence from food, with the use of stimulants, if indicated. When there is protrusion, if the wound is small, pinch up its edges with forceps, and tie a thin silk ligature round it: return the intestine into the abdomen, but keep it close to the external wound. If the opening into the bowel is large, close it with the uninterrupted suture, using the finest possible needle and silk; and retaining the intestine, as before, close to the external wound. If there is complete transverse division of the intestine, the best plan is to retain both ends at the external wound, so as to form an artificial anus, and afterwards adopt means to restore the integrity of the canal. (Mr. B. Cooper, p. 174.)

Palate.—Gutta percha makes an excellent kind of artificial palate.—(p. 174.)

Peritonitis, *Chronic, of Children.*—Vide "Tabes Mesenterica."

Of Phthisis.—Give five grains of trisnitrate of bismuth, w
magnesia and gum arabic, three or four times a day. . (Dr ne for-
Thompson, p. 110. . W. B.
Fistula *in Ano.*—Divide the sphincter ani completely; from the
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means of a ligature, instead of using the knife. (Mr Colles, p. 171.)
Recto-Vaginal.—Divide the sphincter ani, (but w sed into the bowel
fistula), and pass a probe coated with potassa. fu sed at the same time,
bring the edges together with a ligature. (Mr. P be attempted by pinch-
Gastrodynia.—If arising from *acidity*, of con ane, at about equal dis-
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or rheumatic diathesis, do not give neut oying a portion of the mucous
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axacum, to which sulphate of mag rent any of the divided vessels from
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rhoids lead to the gastric pain. mechanical support is the only means that
and moderate purging, are th p. 188.)
appears to be *simply* neur mixture to the inside of the mouth. (Dr.
various sedatives, narcoti
used, according to the te case it is non-malignant, employ the recumbent
Dick, p. 114.) and enemata, or the bougie; but the latter
Harelip.—When th ause who have a thorough knowledge of the
divided alveolus proj 197.)
ively than is usual (*or Cancrum Oris.*)—Apply strong nitric acid
with the bone for by means of a piece of sponge fixed on the end
tween the first a guard the tongue, and other healthy parts against
portion to the This should be done *early;* and in order that it
This operatio examine the mouth every twelve hours, and re-
done as soon mortification continues to spread. If a further appli-
In opera is unnecessary, it may still be needed in a diluted
each side lime in powder may be applied once or twice a day.—
by the f frequently during the whole of the treatment, with
cision, camomile tea, mixed with a small quantity of solution of
less" Internally quinine or bark must be given, in conjunction
p. 17 other stimulants, and nutritious diet. (Dr. C. West,

C *Noma.*)—The treatment having been commenced with a
the bowels are constipated, give chlorate of potash, which
the name of a specific in this affection. The dose for a
years old, is three grains dissolved in sweetened water, every
and to a child of eight or nine, more need not be given than
every four hours. The diet should be light and nutritious. (Dr.
p. 112.)

Mesenterica.—In the first stage, rely chiefly upon dietetic and
means. In the second, relieve pain by the application of a large
frequently renewed, to the abdomen, avoiding, if possible, the ap-
of leeches. As mild mercurials continued for a long time are of
soon as the abdominal tenderness is sufficiently relieved to
t the belly be rubbed twice a day with a liniment consisting
of lin. hydrarg., lin. sapon., and ol. olivæ; and give hydrarg.
an equal quantity of Dover's powder once or twice a day.

may be advantageously supported by a well-adapted flannel
piece of whalebone at either side. If there is diarrhœa,
logwood and catechu. If diarrhœa is slight, or is ab-
ch feverishness, use the tepid bath, and give small
nd ipecacuanha, with extract of dandelion, and the
der. If a mild tonic seems likely to be borne,
f dandelion, extract of sarsaparilla, and car-
n of calumba, or liquor cinchonæ. Chaly-
citrate of iron, or the ferro-citrate of qui-
given with great caution. Change of air,
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nt and unstimulating throughout. (Dr. C. West,

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tonine, prepared from the artemisia santonica, is a valuable
remedy for both lumbrici and tœnia. The dose for an adult
to eight grains, and for a child from two to four, given as a
sugar or preserve, at bed-time, and washed down by a glass of
A second dose on the following evening is sometimes needed.
T. S. Wells, p. 129.)

n *Children.*—The general treatment is, to regulate the diet, and, give
lteratives and ferruginous preparations, with occasionally a brisk cathartic. The special treatment for *ascarides* consists in giving a lime-water enema, with or without two drachms of muriated tincture of iron; if they have occasioned much diarrhœa and tenesmus, the lime-water injection should be given daily for two or three days together, and small doses of castor-oil mixture given every six or eight hours. For *tænia* give decoction of the bark of pomegranate root, in doses of ℥j. thrice a day, to a child seven years old, interrupting its administration twice in the week, in order to give a purge of calomel and scammony. (Dr. C. West, p. 128.)

AFFECTIONS OF THE URINARY ORGANS.

Albuminuria.—The indications of treatment are: 1st, to remove such exciting and predisposing causes as intemperance, and residence in an impure atmosphere; 2nd, to oxygenize the blood by active exercise in the open air; 3rd, to avoid fatty and other non-nitrogenous articles of food; 4th, to administer alkalies freely; and, 5th, to keep up a tolerably free action of the bowels. (Dr. J. F. Duncan, p. 140.)

Diabetes.—The azotized dietetic plan of treatment is efficacious, and the admixture of a small quantity of vegetable food does not very materially interfere with its favourable operation. (Dr. R. B. Todd, p. 140.)

Hydrocele.—Inject the following: ℞. Iodid. potasii ʒj. aq. distil. ℥iss.; tinct. iodine, ʒiv. M. In using this solution, it is of no importance if all the fluid injected does not return. (Dr. Bellingham, p. 203.)

Urea, *Deficiency of.*—This is usually associated with diuresis, and one of the first principles to be attended to is to reduce the quantity of urine, by restraining the patient, as much as possible, from drinking. Cutaneous action must be kept up by the use of the vapour bath and friction, together with Dover's powder and antimonials. The bowels must be kept regular, but active purging avoided. The diet should consist of animal and farinaceous matters, with good porter. (Dr. Prout, p. 132.)

Excess of.—Avoid all rough treatment. Purgatives and alteratives are often necessary, but must be used with caution. Sedatives, especially opium, are usually required, and should be combined with appropriate

Polypus Nasi.—Remove *gelatinous* polypi either by means of the forceps, or what is better, by a snare similar to that used by Mr. W. R. Wilde for the removal of aural polypi. When polypi project back from the posterior nares, if they are small and soft, remove them by a curved pair of forceps, with the blades opening in front and behind. But when single, large, and fleshy, employ the ligature, using a silver wire, and applying it by means of the instrument figured at p. 172. (Mr. W. Colles, p. 171.)

Prolapsus Ani.—A pessary is sometimes useful, passed into the bowel *above* the spinchter muscle; but means should be used at the same time, to improve the general health. A radical cure may be attempted by pinching up several small portions of mucous membrane, at about equal distances from each other, a little above the sphincter, and tying a ligature round each. In obstinate cases, the anal extremity of the sphincter may be divided, with a view of diminishing the opening of the anus. (Mr. B. Cooper, p. 195.)

Some cases will be benefitted by destroying a portion of the mucous membrane with the *strongest* nitric acid. Or remove a fold or two with curved scissors, and immediately touch the surface of the wound with the acid; care having been previously taken to compress the base of the portion removed, so as completely to prevent any of the divided vessels from bleeding. When an operation from any cause cannot be undertaken, use frequent ablution with cold water, or apply the following ointment: ℞. Pulv. hydrarg. nitr. oxyd. ʒiij.; pulv. capsici, gr. v.; ung. cetacei, ℥ j. M. In many old cases, however, mechanical support is the only means that will afford relief. (Mr. H. Lee, p. 188.)

Ptyalism.—Apply frigorific mixture to the inside of the mouth. (Dr. Arnott, p. 342.)

Rectum, *Stricture of.*—When it is non-malignant, employ the recumbent posture, leeches to the anus, and enemata, or the bougie; but the latter should only be used by those who have a thorough knowledge of the parts. (Mr. B. Cooper, p. 197.)

Stomatitis, *Grangrenous,* (*or Crancrum Oris.*)—Apply strong nitric acid to the sloughing surface by means of a piece of sponge fixed on the end of a quill, taking care to guard the tongue, and other healthy parts against the action of the acid. This should be done *early;* and in order that it may be done effectually, examine the mouth every twelve hours, and reapply the acid if the mortification continues to spread. If a further application of the strong acid is unnecessary, it may still be needed in a diluted form, or chloride of lime in powder may be applied once or twice a day.—Syringe the mouth frequently during the whole of the treatment, with warm water or camomile tea, mixed with a small quantity of solution of chloride of lime. Internally quinine or bark must be given, in conjunction with wine and other stimulants, and nutritious diet. (Dr. C. West, p. 113.)

Ulcerative, (*or Noma.*)—The treatment having been commenced with a purgative, if the bowels are constipated, give chlorate of potash, which almost deserves the name of a specific in this affection. The dose for a child three years old, is three grains dissolved in sweetened water, every four hours; and to a child of eight or nine, more need not be given than five grains every four hours. The diet should be light and nutritious. (Dr. C. West, p. 112.)

Tabes Mesenterica.—In the first stage, rely chiefly upon dietetic and hygienic means. In the second, relieve pain by the application of a large poultice, frequently renewed, to the abdomen, avoiding, if possible, the application of leeches. As mild mercurials continued for a long time are of service, as soon as the abdominal tenderness is sufficiently relieved to allow of it, let the belly be rubbed twice a day with a liniment consisting of equal parts of lin. hydrarg., lin. sapon., and ol. olivæ; and give hydrarg. c. creta, with an equal quantity of Dover's powder once or twice a day.

The abdomen may be advantageously supported by a well-adapted flannel bandage, with a piece of whalebone at either side. If there is diarrhœa, give a mixture with logwood and catechu. If diarrhœa is slight, or is absent, and there is much feverishness, use the tepid bath, and give small doses of liquor potassæ and ipecacuanha, with extract of dandelion, and the mercurial with Dover's powder. If a mild tonic seems likely to be borne, give a mixture with extract of dandelion, extract of sarsaparilla, and carbonate of soda; or give infusion of calumba, or liquor cinchonæ. Chalybeates will not often be borne; citrate of iron, or the ferro-citrate of quinine are the best, but must be given with great caution. Change of air, however, and especially removal to the sea-side is the best tonic. The diet must, of course, be light and unstimulating throughout. (Dr. C. West, p. 128.)

THROAT.—For examining the throat and for operations about the mouth, a speculum, of which a wood-cut is given in the text, is highly recommended by Dr. A. Fleming (p. 174).

WORMS.—Santonine, prepared from the artemisia santonica, is a valuable and agreeable remedy for both lumbrici and tœnia. The dose for an adult is from five to eight grains, and for a child from two to four, given as a powder in sugar or preserve, at bed-time, and washed down by a glass of water. A second dose on the following evening is sometimes needed. (Mr. T. S. Wells, p. 129.)

In Children.—The general treatment is, to regulate the diet, and, give alteratives and ferruginous preparations, with occasionally a brisk cathartic. The special treatment for *ascarides* consists in giving a lime-water enema, with or without two drachms of muriated tincture of iron; if they have occasioned much diarrhœa and tenesmus, the lime-water injection should be given daily for two or three days together, and small doses of castor-oil mixture given every six or eight hours. For *tænia* give decoction of the bark of pomegranate root, in doses of ℥j. thrice a day, to a child seven years old, interrupting its administration twice in the week, in order to give a purge of calomel and scammony. (Dr. C. West, p. 128.)

AFFECTIONS OF THE URINARY ORGANS.

ALBUMINURIA.—The indications of treatment are: 1st, to remove such exciting and predisposing causes as intemperance, and residence in an impure atmosphere; 2nd, to oxygenize the blood by active exercise in the open air; 3rd, to avoid fatty and other non-nitrogenous articles of food; 4th, to administer alkalies freely; and, 5th, to keep up a tolerably free action of the bowels. (Dr. J. F. Duncan, p. 140.)

DIABETES.—The azotized dietetic plan of treatment is efficacious, and the admixture of a small quantity of vegetable food does not very materially interfere with its favourable operation. (Dr. R. B. Todd, p. 140.)

HYDROCELE.—Inject the following: ℞. Iodid. potasii ʒj. aq. distil. ℥iss.; tinct. iodine, ʒiv. M. In using this solution, it is of no importance if all the fluid injected does not return. (Dr. Bellingham, p. 203.)

UREA, *Deficiency of.*—This is usually associated with diuresis, and one of the first principles to be attended to is to reduce the quantity of urine, by restraining the patient, as much as possible, from drinking. Cutaneous action must be kept up by the use of the vapour bath and friction, together with Dover's powder and antimonials. The bowels must be kept regular, but active purging avoided. The diet should consist of animal and farinaceous matters, with good porter. (Dr. Prout, p. 132.)

Excess of.—Avoid all rough treatment. Purgatives and alteratives are often necessary, but must be used with caution. Sedatives, especially opium, are usually required, and should be combined with appropriate,

tonics. The food should be light and nutritious, all diluent and diuretic fluids being avoided. (Dr. Prout, p. 132.)

Urine, *Retention of*.—In retention of urine from paralysis of the bladder, cerebral or otherwise, give small and repeated doses of ergot of rye, up to seventy-five grains a day; and continue its use. in decreasing doses, for eight or ten days after the cure. (Dr. Allier, p. 143.)

Varicocele.—A new form of truss is recommended, having some advantages over the moc-main lever. (Dr. L. R. Thompson, p. 204.)

FRACTURES, DISLOCATIONS, &c.

Amputation, *Of the Fingers*.—In amputating at the phalanges, make the flap first, by transfixing on the palmer aspect with a narrow bistoury; then divide the lateral ligaments, open the joint, and divide the skin posteriorly. In operating between the first and second phalanges, transfix at the fold in the integuments; between the second and third phalanges, one line in front of the fold. In removing the whole finger, lay the point of the knife on the skin half an inch above the joint; carry it down over it, then by the side of the finger into the large fold in front, and continue it upwards on the opposite side to join the incision on the dorsum. Then put the ligaments on the stretch, open the joint, and conclude the operation. If the head of the metacarpal bone is to be removed, the operation is the same, except that the incision is to commence an inch and a half above the joint, and that the latter is not to be opened. (Mr. G. Williamson, p. 163.)

Of the Toes.—The same method is recommended as that for amputating the fingers. But the head of the metatarsal bone ought to be preserved, while that of the metacarpal bone should always be removed. (Mr. G. Williamson, p. 163.)

Dislocation, *of the Shoulder*.—Lay the patient on a sofa or bed, and put the heel in the axilla, in the ordinary manner; then fasten a long narrow towel or sheet above the elbow, by means of the noose figured at p. 155, and let the two ends be tied firmly behind the back of the surgeon, over the lumbar region. Powerful extension can now be made, while the hands are free to effect any requisite manipulations. (Mr. W. N. Spong, p. 157.)

Endeavour first systematically to break down adhesions by making forcible extension, and then moving and twisting the limb about in all directions. Afterwards make the special attempt at reduction; and to do so successfully, apply the extending force in a line parallel to the body. (Mr. F. C. Skey, p. 157.)

Of the Hip.—Use two or three narrow and strong pieces of sheeting. Fix the pelvis by one of these firmly tied to a bed-post; a pad made of a napkin doubled twice and then rolled up diagonally, being employed as a pad between the thigh and pudenda. Roll another sheet into a flat rope, and having attached it to the limb above the knee, by means of the noose of which a wood-cut is given at p. 155, fix the two ends to the opposite bed-post. Then, having made all tight, place a short stout piece of stick between the two ends of the second sheet, midway between the thigh and the bed-post, and using it as a lever, twist the sheet upon itself until the requisite amount of extension is made. (Mr. W. N. Spong, p. 154.)

Fracture, *of the Thigh in Infants*.—Flex the hip and knee joints, and then apply a strip of sheet iron, (an inch wide, and thin enough to be easily bent, though sufficiently thick to bear the weight of the limb without yielding), from the lower part of the abdomen to the end of the toes, making it follow the curvature of the limb, and another similar piece behind; the limb being first evenly rolled, and the splints themselves padded. These splints having been securely fixed to the limb and to the pelvis by a bandage, will retain the limb accurately in the flexed position. (Mr. E. F. Lonsdale, p. 147.)

Ununited.—Employ subcutaneous incision of the parts, by passing a strong needle obliquely down, and moving its edge freely about in all directions, so as to cut up the ligamentous bond of union, and the dense investment of the ends of the bones; withdraw the needle, and cover the puncture with isinglass plaster. (Professor Miller, p. 144.)

Gunshot Wounds.—Do not in any case interfere with the wound at all, either for the extraction of splinters, or even for the examination of the wound. Use ordinary antiphlogistic measures, and if the tension becomes excessive, relieve it by two longitudinal incisions, each from three to five inches long, penetrating through the skin and cellular tissue, at a distance of about two inches on each side of the wounds. In comminuted fracture, a positive advantage is gained by leaving the fragments in situ, instead of attempting to extract them, for besides the advantage obtained by preventing the access of air to the fracture, the presence of the fragments, even though they should afterwards become necrosed and be cast off, contributes to the consolidation of the fracture, and prevents the formation of false joints. (M. Jobert, p. 340.)

Ascertain immediately the nature of the injury by direct examination of the parts; and when there are splinters, put the patient under the influence of chloroform, and proceed to extract all the fragments whether they are completely detached, or are adherent to the soft parts. (M. Baudens, 340.)

Rupture *of Tendo Achillis.*—When union does not take place, lacerate the ends of the tendon and the intervening parts by means of subcutaneous puncture. (Professor Miller, p. 144.)

Spine, *Curvature of the.*—When the spine becomes curved from previous curvature of the legs in weak children, support should be given by the use of leg irons, made with joints corresponding to those of the hip, knee, and ankle. Many object to the use of leg irons, but their objections are refuted both by sound theory. and by the results of practice. (Mr. J. Bishop, p. 148.)

AFFECTIONS OF THE SKIN.

Acne.—Give a capsule containing ten minims of Stockholm tar, three times a day. (Mr. J. Wetherfield, p. 223.)

Apply collodion. (Mr. E. Wilson, p. 227.)

Bedsores.—Endeavour to prevent bedsores, by placing oiled and partially inflated bladders under the part which suffers pressure, and by applying Brodie's lotion, which consists of two grains of bichloride of mercury to an ounce of proof spirits. If, however, a slough is formed, apply carrot poultices, on which a solution of chloride of soda is sprinkled, until the slough separates. When it has separated, dress the sore at first with stimulating balsamic applications, afterwards apply solution of nitrate of silver (ten grains to the ounce) every morning, and cover the ulcer with fine carded cotton and oiled silk. Lastly, if the granulations should be exuberant, apply every morning a concentrated solution of sulphate of copper, the dressing with carded cotton and oiled silk being continued till the sore is healed. (Dr. M. C. Bernard, p. 235.)

Burns, *Contraction from.*—Divide the cicatrix thoroughly, and afterwards apply wetted lint or other dressing, covered by a roller applied so as to produce tolerably firm pressure, and a layer of cotton wool to maintain the temperature. Keep the patient on a milk diet during the whole process of healing. (Mr. J. Grantham, p. 236.)

Carefully divide the whole of the contractile tissue of the cicatrix, and dress the parts in an extended posture. (Mr. Whitehead, p. 237.)

Eczema.—Apply a lotion containing bichloride of mercury, three grains to the pint, five or six times a day. Or, apply water as warm as it can be borne. (M. Trousseau, p. 223.)

In eczema and all eruptive diseases attended with more or less exudation, ascertain the reaction of the discharge upon test paper. If it is alkaline, apply nitric acid lotion (ʒss. ad aquæ Oj.) and give small doses of the same acid, in the compound infusion of orange, internally. If the discharge has an acid reaction, adopt the reverse of the above treatment. (Mr. G. Corfe, p. 222.)

Apply the ung. picis liquid., and give tar capsules. Mr. J. Wetherfield, p. 223.)

Erysipelas.—Apply the purest kreasote over the whole of the affected surface and some distance beyond, with a camel-hair brush; give a dose of calomel, followed by one of jalap; and if the throat and fauces are inflamed, pencil them with a solution of nitrate of silver, half a drachm to a drachm in the ounce of distilled water. In the phlegmonous form, repeat the application more frequently, and in the intervals a cold poultice sprinkled with water strongly impregnated with kreasote; or if the face is affected apply a cloth kept wetted with the solution. (Dr. Fahnestock, p. 227.)

Employ cold so as to produce congelation of the parts for a few seconds, by applying a piece of ice, made of a suitable form by a hot iron, and dipped into a mixture of salt and nitrate of ammonia. (Dr. J. Arnott, p. 342.)

Herpes.—Apply collodion. (Mr. E. Wilson, p. 227.)

Zoster.—The most soothing application is freshly made ungt. hydr. ammonio-chlorid., smeared on the whole crop of vesicles, twice or thrice a day. (Mr. G. Corfe, p. 222.)

Issues.—May be made by applying to the part, slightly excoriated or denuded of cuticle, a smooth zinc plate of proper size, having a silver wire soldered to its back; to the other end of the wire is soldered a smooth silver plate of the same diameter as the zinc, and this is closely applied to an abraded surface, *lower* down in the body than the zinc plate. In a few days an eschar will form beneath the zinc plate. (Dr. Cogevina, Mr. T. S. Wells, p. 338.)

Lepra.—Give a capsule containing ten minims of Stockholm tar, three times a day. (Mr. J. Wetherfield, p. 223.)

Lupus, *Non Exedens.*—Apply collodion. (Mr. E. Wilson, p. 227.)

Prurigo, *Pudendi.*—Apply a lotion composed of two or four drachms of the terchloride of carbon, or chloric ether, in a pint of distilled or elder-water: and give a warm bath every evening. (Mr. G. Corfe, p. 222.)

Produce congelation of the parts for a few seconds, by applying a piece of ice made of a suitable form by a hot iron, and dipped into a mixture of salt and nitrate of ammonia. (Dr. J. Arnott, p. 342.)

Senilis.—Apply ung. picis liquid. freely, every second or third day, and a roller where practicable, occasionally bathing the parts in bran water, to remove the deposit of tar. (Mr. J. Wetherfield, p. 223.)

Psoriasis, *Palmaris.*—Give tar capsules, and immerse the hands in a bath of tar water for a quarter of an hour every night, afterwards applying starch powder.

Nasi.—Give tar capsules and anoint the cracks very gently with ung. picis liqid., every night, washing it off with warm water in the morning. (Mr. J. Wetherfield, p. 223.)

Scabies.—Provide the patient with old linen; and order him every morning and evening to make a good lather of yellow soap in his hands, to dip them into a basin of fine sand, and assiduously to rub every part of the body on which the slightest trace of a vesicle exists; (the use of sand-soap balls is more elegant). Having done this till the skin tingles smartly, he is to wipe himself dry, and then to rub common sulphur ointment firmly into the affected parts. He is then to be rolled in the sheet, and have a pair of old gloves on his hands, and is thus left till night, when the same operation is repeated, and thus continued until the fourth day. He is now to have a warm bath, and to be lathered with plain soap and water; and the cure being effected, may have clean linen and clean sheets. (Mr. G. Corfe, p. 222.)

SCALP, *Eruptive Diseases of the.—Herpes Capitis.—Eczema Capitis.—Impetigo Capitis.—Pityriasis Capitis.*—Keep the hair closely cut (not shaved), and in inveterate cases apply a poultice for twelve hours at the beginning of the treatment, to loosen the scabs. Apply ointment of carbonate of soda or potash, twenty or thirty grains to the ounce of lard, three times a day; and wash it off every morning with a lotion containing from half a drachm to a drachm of carbonate of potash or soda, to the pint of distilled water. In all cases begin with the weaker preparations of the carbonate of soda; the carbonate of potash is more irritant, and is chiefly applicable to cases of pityriasis, or the more chronic forms of eczema. In very old chronic cases of impetigo or eczema, apply very dilute citrine ointment at bedtime, and the alkaline lotion three or four times a day. In all cases keep the child strictly on milk diet during the whole of the treatment. And give half a grain of yellow iodide of mercury, two grains of hydr. c. creta, and two grains of aromatic powder, every second morning, to a child six years old; if the child is older, give it every morning—if younger, every third or fourth morning. To children under three years, give half the quantity twice a week; and to infants at the breast, do not give the iodide, but substitute the hydrarg. c. creta, or what is better, the hydrarg. c. magnesia.

Porrigo Capitis.—Give iodide of arsenic: to an adult, from one-tenth to one-fourth of a grain; to a child six years old, one-fifteenth of a grain; and to a younger child, from one-eighteenth to one-twentieth of a grain. Cut the hair closely, and apply a linseed poultice for twelve hours, and apply the carbonate of potash lotion and ointment alternately, for two or three days, till the crusts are all separated. Then apply iodide of lead ointment, (half a drachm to the ounce) during the day, and use the alkaline lotion in the morning. After three weeks or a month suspend the treatment to see if the disease is cured. If it is not, persevere longer with the remedies. (Dr. J. M. Neligan, p. 216.)

SYCOSIS.—Give a tar capsule twice a day. (Mr. J. Wetherfield, p. 223.)

ULCERS.—Apply to the ulcer a smooth plate of silver, having soldered to its back a silver wire, to the other end of which a smooth plate of zinc of the same diameter as the silver is soldered. The plate of zinc is to be placed on an excoriated surface of skin on a part of the body *higher up than the silver plate;* and its position is to be changed every second day, or else an eschar will form under it, while the surface beneath the silver plate granulates and cicatrizes. If the ulcer has an indolent and unhealthy base, the zinc plate may be applied to it for a few days to destroy this, the silver plate being still applied to an excoriated or denuded surface, lower down than the zinc plate. (Dr. Cogevina, Mr. T. S. Wells, p. 338.)

Irritable ulcers may be made to take on the healing process by applying to them a frigorific mixture of such a degree of coldness as to produce congelation of the parts. (Dr. J. Arnott. p. 342.)

Of the Leg.—Uniform and complete support to the entire limb, by a proper application of strapping, affords a more rapid, certain, and generally applicable plan of treatment, than a continuance in the recumbent posture. For a full account of the method of applying the straps, see p. 230. (Mr. G. Critchett, p. 230.)

VENEREAL DISEASES.

GONORRHŒA *in the Female.*—Let the patient first remove as much of the secretion as possible from the vagina, and then inject in an efficient manner a preparation of copaiba, (about a drachm of the soluble balsam to a pint of water), and retain it for five minutes; and then insert a piece of lint six inches square, folded into four, saturated with the copaibal solution. This process is to be repeated four times a day. In those intractable cases in which the neck and cavity of the uterus are involved in the disease, apply an ointment with six or eight grains of nitrate of silver to the ounce of lard, to the internal surface of the uterus, by means of an elastic bougie. (Dr. R. G. Mayne, p. 210.)

The disease generally extends to the lining membrane of the neck or even cavity of the uterus. Apply the solid nitrate of silver to this cavity and to the sides of the vagina, and keep the latter separate by means of a plug of lint. (Dr. Egan, p. 209.)

Copaibal injections are of no use. (Dr. Egan, Dr. de Meric, p. 210.)

ORCHITIS, *Gonorrhœal.*—Keep the patient on low diet, and after administering a purgative dose, give a drachm of tincture of henbane, three times a day. (Mr. Gay, Mr. T. C. Jackson, p. 214.)

Give a mixture containing epsom salts, and a sufficient quantity of tartar emetic to produce decided nausea from the first; say half a grain for the first dose, and then a fourth or a sixth of a grain every four or six hours, so as to keep up the nausea for two or three days. (Mr. B. Phillips, p. 215.)

NON-VIRULENT DISEASES.—1. *Injection for Balano-posthitis.*—Make three injections a day between the glans and prepuce with the following fluid: distilled water, three ounces: nitrate of silver, two scruples.

2. *Abortive Treatment of Blennorrhagia.*—Make one injection only with the following liquid: distilled water, one ounce; nitrate of silver, fifteen grains. And take every day, in three doses, the following powder: cubebs, one ounce; alum, thirty grains.

3. *Injection for Blennorrhagia when the period for the Abortive Treatment is passed.*—Make three injections daily with the following liquid: rose water, six ounces and a half; sulphate of zinc, and acetate of lead, of each, fifteen grains.

4. *Internal Treatment of Blennorrhagia.*—Take one table-spoonful of the following emulsion three times a day: copaiba, syrup of tolu, and syrup of poppies, of each, one ounce; peppermint water, two ounces; gum arabic, a sufficient quantity; orange flower water, two drachms.

5. *Acute stage of Blennorrhagia.*—Twenty leeches to the perinæum; bath after the leeches; refreshing drinks; rest in bed; low diet; suspensory bandage. Take one of the following pills four times a day: expressed and inspissated juice of lettuce, (lactuca sativa,) and camphor, of each, forty-five grains; make twenty pills.

6. *Gleet.*—Make every day three injections with the following liquid: rose water, and Roussillon wine, of each, six ounces; alum and tannin, of each, ten grains.

7. *Subacute Epididymitis.*—Rub the testis twice a day with the following ointment: stronger mercurial ointment, and extract of belladonna, equal parts of each; a poultice to the part after the ointment, and rest.

8. *Acute Epididymitis.*—Fifteen leeches to the perinæum, and the same number in the groin corresponding to the affected epididymitis; bath after the leeches; barley-water for common drink; low diet, rest, and poultice.

9. *Chronic Epididymitis.*—Apply Vigo's plaster to the testes, and wear a suspensory bandage. (Simple plaster, yellow wax, pitch, ammoniacum, bdellium, olibanum, mercury, turpentine, liquid styrax, and volatile oil of lavender, are the component parts of Vigo's plaster.)—(*Reporter of Lectures.*)

VIRULENT DISEASES.—PRIMARY SYMPTOMS.—10. *Abortive Treatment of Chancre.*—Within the first five days of the contagion, destroy the chancre with potassa fusa cum calce, (pâte de Vienne.)

11. *Regular non-indurated Chancre.*—Frequent dressing with the aromatic wine, extreme cleanliness, occasional light cauterization with the

nitrate of silver. Rest, demulcent drinks; when there is inflammation, antiphlogistics, purgatives, and emollient applications. (N.B.—No mercury.)

12. *Phagedænic Chancre.*—Complete cauterization with the nitrate of silver, the liquid nitrate of mercury, the potassa cum calce, or the hot iron, according to circumstances. Afterwards lotions with aromatic wine, three ounces; extract of opium, three grains; or, aromatic wine, eight ounces; tannin, thirty grains; or, distilled water, three ounces; tartrate of iron and potash, four drachms; or, in the scrofulous diathesis, distilled water, three ounces; tincture of iodine, one drachm; or, sulphur ointments, and sulphureous baths. Internally: tartrate of iron and potash, one ounce; distilled water, eight ounces. One ounce three times a day.

13. *Indurated Chancre.*—Three dressings a day with the following ointment: calomel, one drachm; axunge, one ounce. (N.B. Mercury is used internally for the *indurated* chancre: as to the mode of administration, see secondary syphilis, No. 21, as the metal is given in the same manner in both cases.)

14. *Acute, non-Specific Adenitis, vel Inflamed Bubo.*—Twenty leeches on the tumour, emollient cataplasms, barley-water as ordinary drink, rest, broths. If fluctuation be detected, let out the purulent matter by a free incision.

15. *Abortive Treatment of the Bubo Consecutive, by absorption of the Virus, to the non-Indurated Chancre.*—Deep cauterization of ten minutes' duration, with the potassa fusa cum calce, and await the fall of the eschar. (N.B. Analogous to the early destruction of chancre.)

16. *Bubo Consecutive to the non-Indurated Chancre, which inevitably Suppurates.*—Use antiplogistics according to circumstances, and then free the purulent matter by cauterization with potassa fusa; gradually destroy afterwards, by the use of caustics, the glandular mass which lies at the bottom of the open bubo. To the poultices used after cauterization may be added an ointment, of equal parts of extract of belladonna and mercurial ointment.

17. *Horse-shoe Bubo and Gangrene.*—Horse-shoe and phagedænic ulcers in the groin, resulting from a suppurating bubo, require the dressings mentioned in No. 12. Gangrene: chloride of lime, one ounce; distilled water, three ounces. This lotion is to be used several times a day. Or, powdered charcoal, powdered Peruvian bark, equal parts of each, to be thickly applied to the sore.

18. *Phimosis.*—Inject between the glans and prepuce the aromatic wine with opium, as mentioned in No. 12, and use emollient and sedative applications; if gangrene be imminent, operate.

19. *Paraphimosis.*—Keep the organ raised, and surround it with cold compresses. Bland diet, refreshing drinks; endeavour to reduce or free the constriction by an incision, according to circumstances. After the strangulation is relieved, use emollient and antiseptic applications combined with opium.

20. *Scrofulous Complications.*—Order every day the following emulsion in three equal doses: iodine, three grains; oil of sweet almonds, one ounce; gum arabic, a sufficiency; almond emulsion, three ounces.

SECONDARY SYMPTOMS.—21. Order every day three tumblers of decoction of saponaria leaves, and put into each tumbler one tablespoonful of sirop de cuisinier, (N.B. Sirop de cuisinier: sarsaparilla, borage and white rose leaves, senna, aniseed, honey, and sugar;) and take every day one of the following pills: proto-iodide of mercury, inspissated juice of lactuca sativa, of each forty-five grains; extract of opium, fifteen grains; extract of hemlock, one drachm and a half. Mix, and make sixty pills.

22. *Slight Stomatitis.*—To gargle three times a day with the following liquid: decoction of lactuca sativa, five ounces; honey, one ounce and a half; alum, one drachm and a half.

antero-posterior diameter, the long or fronto-occipital diameter of the child's head occupies the transverse diameter of the brim. The blades of the long forceps should, therefore, be placed obliquely upon the child's head; one, the posterior, over the side of the occiput; and the other, or anterior, over the side of the brow or temple; or, in other words, they should be applied in the oblique diameter of the brim, for in this situation there is the most room for them. (Prof. Simpson, p. 276.)

HÆMORRHAGE, *Uterine.*—In hæmorrhage from polypus, malignant disease, or separation of the ovum or placenta, bitartrate of potash given internally is a useful remedy. (Dr. Silvester, p. 286.)

Passive hæmorrhage may be safely and successfully treated by galvanism. An instrument by means of which this agent may be conveniently applied to the uterus, is described in the text. (Dr. T. E. Waller, p. 287.)

LEUCORRHŒA.—In those cases of imperfect menstruation, (sometimes treated as leucorrhœa), with sanious or pale secretion from the uterus, and venous bruit, give bitartrate of potash. Dose not stated. (Dr. Silvester, p. 286.)

MENORRHAGIA.—Give bitartrate of potash. Dose not stated. (Dr. Silvester, p. 286.)

NIPPLES, *Sore.*—Apply tincture of catechu; or solution of tannin, five grains to the ounce (Druitt); or equal parts of tincture of galls and compound tincture of benzoin; or the following lotion: ℞. Sodæ sub-bor. ʒij.; cretæ præcip. ℥i; sp. vini, aq. rosæ, aa. ℥iij. M. This may be applied alternately with the following ointment, or the latter may be used alone: ℞. Ceræ alb. ʒivss.; ol. amygd. dulc. ℥i.; mel despum. ℥ss.; solve ope caloris, deinde adde gradatim, bals. peruv. ʒijss. M. For fissured nipples, nitrate of silver is useful, at a period remote from delivery. (p. 303.)

Apply collodion with a camel-hair brush. (Mr. E. Wilson, p. 227.)

OVARIAN DISEASE.—It is proposed to treat certain cases of ovarian disease by establishing solid adhesions between the tumour and the abdominal walls; effecting a very small ulcerative opening of the cyst through the centre of these adhesions; and so inducing gradual discharge of the fluid, and contraction of the walls of the cyst. The cases to which this method is applicable, are those where the cyst is monolocular, and without any amount of solid deposit. These points may be ascertained by a preliminary tapping, by which we may judge also of the degree of tendency to peritonitis. If, after tapping, the case is thought to be a suitable one, the cyst is to be allowed to refill to half its previous size, and the treatment is then to be commenced. It consists in applying a portion of Vienna paste, so as to produce an eschar of the size of a half-crown, at some part of the abdomen; either at the spot where the fluctuation is most superficial, or, if there be no such spot, in the mesial line, an inch or two below the umbilicus. The eschar is to be left to separate of its own accord, and then, if the thickness of the abdominal walls requires it, another portion of caustic applied to the abraded surface. The second step in the treatment, the formation of a valvular opening into the cyst, is not to be attempted by surgical interference; it will take place by ulceration spontaneously, a few days or weeks after the separation of the eschar. When the contents of the cyst begin to escape, abdominal pressure must be used; at first, moderate, with a view, not of emptying the cyst, but of giving support: afterwards gradually increased, with a view of diminishing the size of the cyst, now become too large for the quantity of fluid secreted by its lining membrane. The contraction of the cyst will necessarily be slow, and it is of great importance to keep it quite full. For this purpose injections should be used, and their employment should commence when the secretion becomes very fœtid. The point of an india-rubber tube, eight inches long, and funnel-like in shape at its other extremity, is to be gently passed through the opening, into the cyst, and tepid water gradually and gently injected in sufficient quantity, care being taken to exclude air; the patient is then told to strain, when the overplus of the fluid will trickle out through the tube. When the use of injections has been commenced, they should be used regularly, every day before breakfast; and oftener, if the fœtidity of the secretion requires it. As to the other modes of treatment,—small tumours may be cured by giving large doses of the preparations of iodine internally, and using them externally. When the cyst is voluminous, and bulges into the vagina, it may be punctured *per vaginam*, and an india-rubber sound left in its cavity, and moderate pressure applied to the abdomen. Subcutaneous incision into a monolocular cyst is sometimes warrantable. Tapping, as a palliative, is to be deferred as long as possible. And ovariotomy is to be reserved for multilocular cysts, and those monolocular ones which contain much solid deposit. (Dr. E. J. Tilt, p. 289.)

Prolapsus Uteri.—Galvanism will be found useful. A proper instrument for its application is described in the text. (Dr. T. E. Waller, p. 287.)

A new form of pessary for prolapsus, figured at p. 303, is highly recommended by Dr. Weir, p. 303.

Puerperal Convulsions.—In those cases where there is a cold skin, congested countenance, and slow pulse, galvanism will be useful. One wire should be placed behind the neck, and the other over the last lumbar vertebra. (Dr. J. R. Wardell, p. 286.)

Retroflexion *of the Uterus*.—Retroflexion, and the other flexions and versions of the uterus, are by no means of such common occurrence as it has been recently asserted. Many of them may be caused, as well as detected, by the uterine sound, which like Dr. Simpson's uterine support, is anything but a harmless instrument. (Dr. Ashwell, p. 287.)

When used in an unrestricted manner, Dr. Simpson's uterine sound is a dangerous instrument; and the ivory stem used by him as an internal support is also very objectionable. (Dr. Oldham, p. 293.)

Suppressio Mensium.—Give a purgative, and then administer tincture of the seeds of stramonium, (stramon. sem. ℥iv.; alcohol. dilut. Oj.) in the dose of twenty drops thrice a day, adding a drop to the dose each day, and continuing it till it produces either dizziness and vertigo, or the catamenia. (Dr. B. Jones, p. 306.)

Ulceration *of the Os Uteri*.—Having wiped the surface dry, paint it over with collodion, by means of a camel-hair brush, and allow it to dry, which will occupy a couple of minutes: apply a second, third, and fourth coating, if necessary, and repeat the application at the end of forty-eight hours. In obstinate cases where there are large granulations, apply nitrate of silver, potassa fusa, or acid nitrate of mercury, in the ordinary way first, and then apply a varnish of collodion over the eschar. (Dr. T. R. Mitchell, p. 270.)

When it is desired to apply medicinal substances for some time continuously to the os and cervix uteri, they may be made into the form of a pessary, with wax and ointment. (Various formulæ are given in the text.) (Dr. J. Y. Simpson, p. 302.)

Uterus, *Hypertrophy and Induration of the*.—Reduce the size of the uterus by the application of four or six leeches to the upper and back part of the vagina once or twice a week. Blister the sacrum or inguinal region, when these parts are the seat of continuous pain; or rub them well with a liniment composed of tinct. aconit. (Fleming) ʒiv.; ext. belladon. ʒss.; lin. sapon. co. ℥iss.; M. Internally give the solution of bichloride of mercury, in doses of one or two drachms twice in the day, combined with vegetable tonics, or chalybeates, and occasionally, if the bowels are torpid, with a little tinct. rhei. Let the colon and the rectum be cleared out daily by a tepid or cold milk-and-water injection; long continued exercise or standing to be avoided; and sexual intercourse abandoned or nearly so. The application of potassa fusa, and other escharotics to the uterus, is much to be deprecated unless there be fungoid granulations about the os and cervix. But with a view of strengthening the structures below the uterus, cold hip baths may be used, and astringent injections efficiently given, such as decoction of oak bark or tormentilla, solution of sulphate of zinc, &c., or vaginal suppositories, made of ten or twelve grains of tannin mixed up with honey. And mechanical support should be afforded by means of a perinæal pad, attached to a firm, elastic, abdominal belt. (Dr. Oldham, p. 293.)

VAGINITIS.—Paint the walls of the vagina with several coats of collodion, taking care to allow the first coat to dry well, (which requires two or three minutes at least) before the second is applied. (Dr. T. R. Mitchell, p. 270.)

ASIATIC CHOLERA.

[In the last Retrospect will be found some admirable papers on cholera, especially one by Dr. Bell, of Manchester, also by Mr. French, and others. See Retrospect, Part XVII., p. 95.]

Treatment of the Precursory Diarrhœa.—Do not instantly check the diarrhœa, as it is probable that the poison is passing off by the intestines.—But moderate the irritation by gentle opiates; act upon the skin and kidneys; give plenty of demulcent drinks, and free pure air; take care not to irritate the gastro-intestinal mucous membrane; and as an antidote to the poison in the blood, give a few doses of quinine, or the vegetable acids. Perhaps the best formula would be, a grain or two of amorphous quinine with two or three grains of tartaric acid and a few mimims of laudanum, every six hours. (Dr. Laycock, York, p. 305.)

If the diarrhœa is without pain, give from four to eight drops of naptha; not the naptha of the shops, or acetone, nor the petroleum or Barbadoes tar, but a pure white or rose-coloured naphtha, (not distilled), which is procured, it is supposed, on the borders of the Caspian. It should be given in brandy, white wine or mint tea, taken cold. A single dose is usually sufficient, but it may require repetition in two or three days. If however, pain accompanies the diarrhœa, treat the case simply with opium. (Dr. Andreyeoski, p. 321.)

If the attack begins with nausea. give a gentle emetic, as pulv. ipecac. ℈ij; but if there is only relaxation and uneasiness of the bowels, give four grains of calomel and two of extract of opium followed in two hours by a dose of castor oil. And in about two hours after this, give two tablespoonsful of the following mixture every two, three, or four hours:—℞. Ammon. sesquicarb., ℈i.; sodæ sesquicarb. ʒi.; conf. aromat. ʒi.; tinct. capsici ♏xxx.; liq. opii. sedat. ♏xxx.; mist. camph. ad ℥vj.; misce. And give three grains of hydr. creta. and three of powdered capsicum every four hours; always taking care not to carry the mercurial too far. (Mr. J. R. Hancorn, p. 333.)

Treatment of the fully-formed Disease.—*Calomel.*—Give Calomel in one or two grain doses, with one or two drops of laudanum every five or ten minutes, for several successive hours, with an occasional omission of the laudanum at intervals. An immense quantity of calomel may thus be taken with the most beneficial effects, and without ptyalism resulting. No auxiliary means are required, beyond supporting the strength of the patient, and applying friction for the cramps. (Dr. J. Ayre, Hull, p. 318.)

Nothing can be trusted but calomel, when once the stools have assumed the rice-water character; therefore five grains are to be given every four hours until a large bilious evacuation is produced. But it is necessary, in the meantime, to restrain the discharge from the bowels, and the best remedy that can be used for this purpose, is the compound sulphate enema, composed of sulphate of copper, sulphate of zinc, and alum, a scruple of each dissolved in two ounces of cold water. A wineglassful of this solution is to be thrown into the rectum, and the patient instructed to retain it as long as possible: it will probably be returned almost immediately, accompanied by a large discharge of watery fluid. Another wineglassful is to be instantly thrown up: and if this comes away accompanied by a watery discharge, the enema is to be again repeated, until it either returns without any addition, or is retained. Two or three enemata are usually sufficient to check the discharge; they generally occasion considerable tenesmus, which may be relieved, when the patient is freed from the graver symptoms, by an enema of starch and laudanum. If the watery discharge should return, the sulphate enemata are to be again immediately resorted to. If there is discharge of pure blood, or bloody fluid, solution of alum must be injected. Each injection should consist of three drachms of alum dissolved in half-a-pint of cold water; and as fast as one injection comes away, another must be instantly given, so long as there is any appearance of blood. (Dr. C. Patterson, Rathkeale, p. 319.)

Astringents.—Give a pill composed of acetate of lead and opium. (℞. Plumbi acet. ℈i. opii gr. j.; pulv. glycyrrhiz. gr. vi.; mucil. acacia. q. s. M. ft. pil. xij.) every half hour, till the rice-water diarrhœa begins to diminish, when the intervals between each pill may be gradually prolonged.—(Dr. Graves, Dublin: Dr. Parkes; Dr. Thom, 86th Reg., p. 327.)

Give two grains of acetate of lead and a half a grain of opium, every hour or two for a few times. Apply mustard poultices, hot bottles, and frictions of warm turpentine. And give mustard emetics every hour or two, with a view to bring on reaction. (Mr. Hird, p 334.)

Give tinct. ferri sequichlor, in as concentrated a form as possible immediately after each dejection. Resort to the hot air bath, and apply the following liniment for the relief of the cramp, not forgetting that it will destroy the linen:—℞. Acid. sulph. fort. ʒiss.; ol. olivæ, ℥iss. M. Do not give brandy, or large doses of opium, but allow the patient the free use of iced soda water, iced champagne, or even small pieces of ice retained in the mouth, and occasionally swallowed. (Mr. J. R. Hancorn, p. 333.)

Give oil of turpentine, which is almost a specific in passive hæmorrhages, and which will exercise a similar power over the serous effusion from the mucous membrane of the bowels. (Mr. J. Moore Bourton, p. 324.)

Give one-eighteenth part of a grain of strychnine, made into a pill with conserve of roses, every quarter of an hour, and let it be washed down with copious draughts of cold water. The first three or four pills will probably be rejected. (Mr. C. E. Jenkins, p. 333.)

Diluents.—The most important remedies are copious diluents, which relieve, in the gentlest manner, the irritation of the stomach and bowels; and of these the common effervescing draughts seem to answer the purpose admirably, and are extremely grateful. They should be taken *ad libitum*, as the thirst prompts. Treat the cramps in the legs by applying hot fomentations to the loins and stomach. As to other remedies, bleeding alone will not cure the disease, and if the diluent system is resorted to early, bleeding will be unnecessary; but in some neglected cases may require the abstraction of blood, which must always be accompanied by the free exhibition of diluents. (Dr. W. G. Maxwell, Calcutta, p. 309.)

Simple diluents are among the most important accessories of the treatment. (Mr. M. T. Sadler, Barnsley, p. 318.)

Tartarized Antimony.—Dissolve five grains of tartarized antimony in half-a-pint of camphor mixture, and give an ounce every two hours; and urge the patient to drink freely of toast water. As soon as vomiting begins, encourage it with the toast water; and keep the patient drinking and vomiting until the stomach becomes tolerant both of the antimony and the fluid, when the quantity of the toast water drank may be diminished. When cramps attack the abdomen, apply sinapisms. As soon as a bilious stool or similar favourable sign occurs, omit the medicine, apply warmth to the feet, and give a little arrow root flavoured or not with brandy. The patient will usually fall into a quiet sleep, and the next morning a little castor oil may be given. (Mr. Stott, Manchester; Dr. C. Radcliffe Hall, p. 324; Dr. J. Shearman, Rotherham, p. 329.)

Give three grains of tartarized antimony, and repeat it in half an hour. (Dr. L. Stewart, p. 334.)

Chloroform.—Use external warmth and stimulating applications, and give a glass of hot brandy and water spiced. Put the patient under the influence of chloroform by inhalation, and readminister it immediately, as long as the bad symptoms recur. Give in the intervals small quantities of brandy with water or soda-water, and thin arrow root or milk. Give no medicines of any kind; but bleed gently if the reaction after the use of chloroform is excessive. (Dr. J. Hill, Peckham Asylum, p. 331.)

The value of this plan of treatment is confirmed also by Dr. Clutterbuck and Mr. Garrett, (p. 330.)

Give about six drops of chloroform, with about forty of oil of turpentine, in a little brandy and water; apply sinapisms; and allow the patient to drink freely of water. In half an hour after the chloroform, give five grains of calomel, and ten of ox-gall, made into pills. Repeat the draught and pills in an hour or two if necessary. (Mr. P. Brady, Harrow, p. 331.)

The exhibition of two, three, or four minims of chloroform in a little brandy and water, every two or three hours, is also recommended, with some slight adjuvant treatment, by Mr. G. Plimmer, Mr. J. B. Steadman, (p. 332.)

Naptha, &c.—Employ the warm bath, and use vigorous frictions of all parts of the body. And give from fifteen to twenty drops of naptha, and if it is vomited, repeat the dose; a second is rarely required if the first be retained. The naptha is not the ordinary naptha of the shops. nor yet the petroleum, or Barbadoes tar; but a pure white or rose-coloured fluid, not distilled, but found native, it is supposed, on the borders of the Caspian. (Dr. Andreyeoski, p. 321.)

Give petroleum (petroleum Barbadense), or pure hydro-carbon, in the following form:—Take the yolk of an egg, and mix intimately with it a table-spoonful of petroleum; add forty drops of aromatic spirit of ammonia, and equal quantities of brandy and water to fill a wine glass; and this dose may be repeated according to the emergency of the case. (Dr. J. Tunstall, Bath, p. 323.)

Give napthaline (procured from Hooper, Pall Mall East) in one or two grain doses, in the form of pill, along with opium or aromatic confection. The cases in which this remedy is applicable, are chiefly those in which great flatulence and a tympanitic state of the bowel exists. (Mr. J. C. Atkinson, p. 322.)

Miscellaneous.—When a case is verging into the stage of collapse, it is proposed to take from a vein as much blood as can reasonably be abstracted, and then to transfuse warm blood from a healthy subject, and to keep up respiration with a mixture of equal parts of oxygen and atmospheric air, by means of a modification of the mouthpiece of Sibson's chloroform inhaler. (Dr. E. J. Shearman, Rotherham, p. 329.)

Quinine is recommended. (Dr. Henriques, p. 313.)

Camphor and laudanum in small doses, antiseptic fumigations, and stimulating frictions, are recommended. (Dr. Kennedy, Woodhouse, p. 313.)

The resinous extract of Indian hemp, is recommended. (Dr. Willemin, Cairo, p. 335.)

In the stage of collapse, the use of long continued galvanic passes through the respiratory and spinal nerves, are recommended. (Sir J. Murray, p. 318.)

Hot air and vapour baths are recommended, and various contrivances are mentioned for making their application cheap and expeditious, by Mr. F. Ward, Dr. R. Chambers, Mr. C. M. Thompson, Dr. Wood, and Mr. H. Hulme, (p. 335.)

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